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THE UNIVERSITY OF ALBERTA

THE IMPACT OF UNIONIZATION AND COLLECTIVE BARGAINING ON HOSPITAL OPERATING COSTS IN ALBERTA HOSPITALS, 1971 - 1977

by

© Helene Anne Donahue

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
AND RESEARCH IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF

Master of Health Services Administration

Division of Health Services Administration
Faculty of Medicine

EDMONTON, ALBERTA
Spring 1980

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled: The Impact of Unionization and Collective Bargaining on Hospital Operating Costs in Alberta Hospitals, 1971-1977 submitted by Helene Anne Donahue in partial fulfilment of the requirements for the degree of Master of Health Services Administration.

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ABSTRACT

Given the phenomenal rise in hospital costs in recent years and the fact that labour costs comprise a major share of hospital operating costs, there is intuitive concern that unionization and collective bargaining are closely related to the surge in costs. The major purpose of this study was to attempt to determine the extent to which unionization and collective bargaining have contributed to the rise of costs in public general and auxiliary hospitals in Alberta. The time frame of the study was limited to the period 1971-1977, a time frame that embraces (1) the unionization of many hospital workers in the public hospital sector; (2) the evolution of bargaining structure; and (3) the use of the collective bargaining system.

In order to compare reported changes in labour costs with settlements in the collective bargaining system, a historical time series was constructed from selected financial and statistical information provided by Alberta Hospitals and Medical Care. The analysis proceeded on two levels and included two major classifications of data. Financial and statistical information relating to acute care and auxiliary hospitals funded by Alberta Hospitals and Medical Care was grouped into eleven categories by bed size. Then information on wages and salaries and paid hours was assigned to proxies of the bargaining units that prevail in the hospital sector.

The analysis was carried out in three parts. First, measures of input, output and utilization were examined in relation to operating costs and labour costs by Hospital Group in an attempt to discover meaningful relationships between these factors and costs and possibly shifting patterns of significance with respect to Hospital Group size changes. Second, the distribution of labour costs by bargaining unit and the changes in this distribution were examined. Finally, a comparison of wage settlements to changes in labour costs by bargaining unit was attempted.

The results indicate that there are complex reasons for the rise in hospital operating costs. There was no evidence to confirm that the overwhelming increase in hospital operating and labour costs over the time of the study was directly attributable to unionization and collective bargaining. The study concludes with recommendations to improve the quality of data collected by the provincial funding agency.

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CHAPTER I

INTRODUCTION

1.1 Rise of Costs in Health Care

Space age metaphors abound. Health care costs throughout the western industrialized world are described as sky-rocketting, soaring, spiralling and exploding and it is evident that even the most affluent of nations are hard pressed to fuel the system

There are three principal reasons for the increased attention being paid to the provision of health services in Canada. First, the proportion of our resources devoted to the provision of health care is not only high absolutely but also projected to increase even further. The Economic Council of Canada has forecast that if health services and higher education are added at the same rate as in recent years, they could equal gross national product by the year 2000.[1] Second, the health care sector is within the public economy and is largely insulated from the market system of rewards and penalties which may impede attempts to achieve more efficiency. Third, in a world of scarce resources, it has become necessary to determine if the allocation of more resources to health care can be justified in terms of increased social benefits or if, in fact, we have reached the point of diminishing returns. As Bennett and Krasney note in their recent series in the Financial Post:

> Every province appears to have decided to apply the brakes to health care expenditure growth. . . tough measures are needed to prevent health care from siphoning off resources from other urgent priorities.2

There is substantial evidence to indicate the rapid growth of the Canadian health care sector. In 1960, total expenditures on health care accounted for 5.5 percent of the GNP; this proportion had increased to 7.3 percent, or one-third higher by 1971.[3] The percentage then dipped to 6.9 percent in the next two boom years returning to 7.2 percent in 1975. While the decline in proportion of GNP from 1971 to 1975 suggests that Canada had the situation under control, the rate of increase in health care costs in 1975 and 1976 of 15 percent (which translates into an increment of $1.5 billion annually) has once again precipitated considerable political and public concern.[4]

1.2 Hospital Costs and the Rise of Costs in Health

Expenditures on general and allied special hospitals dominate Canadian health care spending. The cost of hospital care is the largest single item of health care expenditures. It is also the component which exhibited the most rapid growth throughout the sixties and emerged as the most significant component of the health services industry whether measured in terms of capital and labour employed, total costs, government expenditure or growth rate per capita.[5]

1.3 Rise of Hospital Costs in Alberta

In 1975 the Alberta hospital sector accounted for two-thirds of all provincial health care spending, and represented twenty percent of the province's total operating budget commitments. Furthermore, the operating costs of public general and allied special hospitals in Alberta grew from $193 million in 1971 to $385 million in 1975 representing nearly a 100 percent increase in four years.[6] At the same time, the cost per patient day in Alberta rose from $48.10 to $97.59 and the province had the dubious distinction of having the highest per capita operating expenses in Canada ($217.38 versus a Canadian average of $207.03) as well as the highest utilization rate (2,346.2 patient days per 1,000 population compared to a Canadian average of 1,999.3 patient days per 1,000 population).[7]

1.4 Capacity of the Alberta Hospital Industry

The hospital industry in Alberta has a resource size of considerable importance in the provincial economy. Its magnitude is reflected in the following statistics which show that at the end of 1977 there were[8]:

1. 119 public general hospitals;
2. seven federal general hospitals and nursing stations;
3. two contract general hospitals;
4. two special rehabilitation centres; and
5. twenty-nine auxiliary hospitals.

These institutions represent a total capacity of 15,137 beds giving a ratio of 8.00 beds per 1,000 population. Table 1 details the change in capacity in Alberta hospitals from 1971 - 1977. While it is evident that the ratio of hospital beds per 1,000 population has declined over this time, it is still well above the Canadian average.

1.5 Reasons for the Rise in Hospital Costs

There are four basic reasons which contribute to the growth of hospital costs:

1. increase in personnel;
2. additional output;
3. higher wages; and
4. increased costs for non-labour outputs.

However, identifying and quantifying the contribution of these four factors only illustrates how hospitals costs have increased and does not answer the fundamental question "Why have there been increases in total hospital costs generally?" Explanations proffered by economists appear contradictory. Some economists stress "demand-pull" as the initiating and driving force in cost escalation while others emphasize "cost-push."[9] The American economist, Martin Feldstein, places primary emphasis on insurance induced demand[10] while his counterpart in Canada, Robert Evans, believes that supply side factors are more important in the Canadian experience.[11] Methodologically it is not possible to determine if hospital costs are rising because of increased demand which leads to higher input costs

TABLE 1

Hospitals Operating in Alberta, Capacity
1971 - 1977

	1971	1973	1975	1977 Dec. 31, 1977 (9 month period)
General Hospitals (Including Public, General, Contract and Federal)	127	129	129	128
Bed Capacity (All General Hospitals)	11,976	12,047	11,984	11,661
General Hospital Beds/1,000 Population	7.37	7.16	6.77	6.10
Auxiliary Hospitals, Special Rehabilitation Hospitals	30	31	31	31
Auxiliary Beds/1,000 Population	1.52	1.65	1.56	1.62
Total Number of Hospitals	157	156	158	159
Total Capacity	14,919	15,235	15,170	15,137
Total Hospital Beds/1,000 Population	9.16	9.05	8.57	8.00
Canadian Average	7.0	7.1	6.9	7.1

Source: *Annual Report*, Alberta Hospital Services Commission, Ministry of Hospitals and Medical Care for the Years 1971-1977.

Note: The 1977 Report covers the activities of the Commission during the nine month period from the conclusion of the previous financial year on March 31, 1977 to the establishment of the Department of Hospitals and Medical Care on January 1, 1978.

or if the costs of inputs are rising leading to higher hospital costs. It may be as Greenfield suggests ". . . that once started the two factors become mutually reinforcing."[12]

While the literature on the possible explanations for rising hospital costs is voluminous, Huddleston and Tysen point out that many of the explanations have not yet been well tested.[13] However, the usual explanations generally focus on eight contributing factors:

1. Labour costs have risen rapidly and unionization and collective bargaining have been the instrumental force in this rise.
2. Increased demand by patients and doctors as a result of insurance coverage and greater expectations from scientific medicine.
3. Excessive utilization of acute care hospitals as a result of the methods of financing and delivering health care.
4. Technological and managerial inefficiency in hospitals.
5. Higher quality care with more performed at greater expense for any given disease condition.
6. Changing medical technology which makes it possible to sustain life at greater cost.
7. Wasteful capital expenditure through the duplication and oversupply of services and beds.
8. Expanded role of the community hospital.
9. Life style illnesses (which tend to be chronic) and an aging population.

For the purposes of the following review, these factors have been synthesized into three major themes which dominate both the literature and discussion on the reasons for the rapid rise of hospital costs.

1.5.1 Hospitals are Inefficient

Much was made of poor management practices in Volume II of the 1969 Task Force Report dealing with hospital services.[14] Concern with hospital inefficiency stems from the fact that the hospital industry, as part of the public sector, is not subject to rigorous processes of competition—efficient operation is not a necessity for survival.[15] Furthermore, it has been well documented that studies on hospital efficiency are hampered by conceptual and statistical difficulties.[16] Evans has formulated these clearly:

> The problem of defining the output of a hospital is a notoriously difficult one combining difficulties of aggregating dissimilar and ill-defined products, incorporation of both rendered service and 'readiness to serve' capability, and the thorny question of distinguishing between activities generating output and those generating waste motion (which the recipient of services often does not pay for and rarely can evaluate).17

Nevertheless, the linkages between cost structure and patterns of patient output have been examined by numerous investigators in an attempt to shed light on the question of optimum scale and provide more meaningful information to explain inter-hospital total and average cost variation.[18] Many of these studies confirm a general pattern of U-shaped average cost curves, although some have found L-shaped and even inverted U-shaped cost curves. None of these studies, however, have determined whether the hospitals under consideration are both technically efficient and minimizing the costs of producing desired levels of output. As Ehrenberg points out: "Unless these institutions are doing so, there should be no presumption that the 'optimal' size hospitals which the investigators obtain are truly optimal."[19] Ehrenberg approaches this question of technical and economic efficiency by examining the extent to which different types and sizes of hospitals substitute licensed practical nurses for registered nurses as their relative wages change . He found evidence to suggest that nonprofit hospitals do not substitute across factors as relative prices change and therefore are not minimizing the costs of producing medical services.[20] Part of the problem may be that the objectives of nonprofit hospitals are not clear, therefore, measured relationships between costs and output in publicly funded hospitals cannot be construed as technologically determined cost functions. For instance, Evans argues that profits (in the sense of revenues over costs) would be an embarrassment to management and hence a break even objective seems more relevant.[21]

One variant of the labour cost push inflation theory focuses on the limited possibility for productivity increases because of the technological structure of the industry.[22] The implication is that the lack of any significant input saving technological progress to justify the wage increases that hospitals must pay to keep up with the rest of the economy has led to increasing hospital costs per unit of output and therefore progressive and cumulative increases in real costs. Ro has tested this theory by calculating the production coefficients of labour and non-labour inputs and concluded that a concurrence of declining "productivity" and increasing price of inputs underlies the statistics of hospital cost inflation in recent years.[23] While this tends to confirm that hospital wage increases have not been offset by gains in productivity, one author, a former hospital administrator, suggests that there is much that individual hospitals can do to reduce costs with the biggest yields in increases employee productivity.[24] Staffing costs have been reduced by several methods. Industrial engineers have been used, external consultant firms specializing in employee productivity have been engaged and methods and systems techniques have been taught to and applied by supervisory staff. One consulting firm specializing in this area estimates that every hospital which has not undergone productivity analysis in some form can yield savings from $1,500 to $2,200 per bed per year depending on the type and size of the hospital.[25]

The major difficulty appears to be one of identifying inefficient hospitals in Canada. This is largely the result of poor quality and inadequate data on hospitals. For instance, there is no link between costs and inputs and any meaningful measure of output (patient days or admissions are commonly used). Hospitals measure direct costs by department but departmental services are not independently costed out or related back to patients and no allocation of overhead cost is made.

The provincial funding agencies have not generally tried to relate cost to case mix in any systematic way and consequently interhospital comparisons may be meaningless.[26] Information systems in existence which supposedly measure or monitor various areas of hospital operations such as the Alberta Indices Program have not overcome these deficiencies.

While the literature indicates that there is much to be done in the way of identifying, measuring and remedying hospital inefficiency, overall the most succinct statement on the role of inefficiency in hospital cost inflation is provided by Martin Feldstein:

> Even if there are good reasons for criticizing the efficiency of hospitals there is absolutely no reason to believe that inefficiency has been rapidly increasing. . . . Inefficiency cannot begin to account for a significant fraction of that overwhelming increase.[27]

1.5.2 Quality and Nature of Care

An explanation for rising hospital costs which is gaining more popularity is that costs rise as hospitals strive to provide higher quality care. In the absence of objective criteria to measure quality of care, quality upgrading has come to mean more inputs of personnel and equipment in order to provide all that is technically possible. Thus, new ways of treating illness have not only changed the nature of care but also altered perceptions of quality. Unlike technical progress in other sectors of the economy, new discoveries in medical technology have not led to decreased health care cost. Alberta Premier, Peter Lougheed, recognized this fact when he stated: "Advancements in medical research (lead to) more expensive treatment in most cases than those before."[28]

Part of the problem may be that the comprehensive hospital insurance coverage that we enjoy in Canada has eliminated consumer preferences. Patients and physicians simply do not have the opportunity to chose between higher cost and lower cost hospital care.[29] At the same time a growing faith in science and curative medicine have likely raised expectations and accelerated the demand for technologically advanced methods of care which patients and physicians perceive to be of higher quality.

A few hardy souls such as Ivan Illich have attempted to decimate the myth that technical progress has increased the quality of care and the general health of the population.[30] Illich argues that technical progress results in the accumulation of prestigious gadgets and the overspecialization of labour which have depersonalized care and have not led to significant improvements in health. Few studies, have been done to determine the costs and benefits of new medical technology. This area like quality assessment of patient care is fraught with judgmental questions of a philosophical and practical nature which are beyond the scope of this paper. However, it is evident that technological progress has outdistanced the ability of current ethical thought to deal with many serious concerns related to the diagnosis and treatment of illness and sustaining life—at any cost.

Another concern expressed by Lee is that hospitals are not entirely altruistic in their attempts to provide quality care.[31] In order to improve their status, some hospitals will strive to adopt the patterns of input utilization of high status teaching hospitals even though their case mix is less complex. This can lead to resource misallocation, the principle aspects of which are the underutilization of inputs and the application of production techniques not appropriate for many types of care. Lee's argument seems most relevant in the context of the Canadian health care system where the original intention was to provide a method of paying any expenses the hospital system generated and few guidelines were established relating to quality. Hospitals identified the quantity and variety of services provided with quality of care and open ended financing arrangements encouraged the expansion of these costly services—the efficacy of which had yet to be demonstrated.

1.5.3 Unionization, Collective Bargaining and Rising Labour Costs

Since a large proportion of hospital costs are labour costs, this portion of hospital expenditure has frequently been singled out as the culprit in hospital cost escalation. Rising wage rates are viewed as the principal cause behind rising hospital costs and there is a presumption held by union leaders, hospital administrators and outside observers that collective bargaining is associated with higher wages and higher costs despite as Fottler notes ". . . a paucity of systematic analysis of the issue. . . ."[32]

Although much of the literature on the union impact on the hospital industry can be categorized as either opinions regarding the propriety of labour unions or case studies of experience in specific organizations, several studies have sought a more definite answer concerning the union impact on hospital costs. In testing the labour cost-push theory of cost inflation Davis incorporated into the multiple regression equation a variable for the threat of unionization. Little evidence was found to support the contention that the threat of unionization was significant in raising wages.[33] Salkever's approach to employee organization was quite different. He hypothesized that a greater degree of unionization increases the effect of demand on wages by increasing the effectiveness of employee pressures. The evidence for this was rather weak; however, there was some indication that the effect of demand on wages was more positive in areas where employees were not extensively unionized but the threat of unionization was present.[34]

A study by Miller _et_ _al_. specifically focuses on three outcomes of collective bargaining: wage and labour costs, disputes, and manpower utilization.[35] Their conclusion was that the net result of these three cost effects is a union impact on average costs on the order of two to four percent. Unionization was often beneficial to the hospital through the reduction of employee turnover and changes in wages, labour costs and management discretion were found to be quite limited. Unfortunately, the methodology (multiple regression analysis) is not described in detail which diminishes the usefulness of the study. Fottler appraises the impact of unions on the wage rates of non-professional employees using regression analysis and clearly specifies the dependent and independent variables.[36] He concludes that the union impact has raised wages a significant amount (4 to 8 percent) but the effect on hospital costs appears negligible—in the range of one to two percent.

These studies indicate that collective bargaining does not appear to be a major contributor to cost escalation but several demurrers must be entered here. First, much of the research on cost escalation is within the context of the American health care system. While the cost trends in hospital expenditure have been similar in the United States and Canada, there are fundamental differences in the method of financing care and as Altman observes ". . . interesting differences in the experience of the two countries. . . ."[37] Second, hospitals in the United States are not financed by a public insurance program as they are in Canada, hence, the opportunity for "cost pass through" may exist to a larger extent in this country.[38] Third, union organizing activity in the hospital industry is a much more recent phenomenon in the American hospital system. Until 1974, the Taft Hartley Act prohibited the unionization of workers in the non-profit hospital sector (87 percent of short term hospitals and 95 percent of the beds are under not for profit auspices).[39] This contrasts sharply with the Alberta experience where general service workers were organized for collective bargaining purposes at least a decade earlier. Finally, the most significant difference is the relative importance of labour costs. Although hospital wages have risen more rapidly than wages in the general economy in both countries, labour costs are a declining fraction of total cost in the United States.[40] On the other hand, labour costs in Alberta hospitals have been quite constant ranging from 74.8 to 76.8 percent of hospital operating costs for the period 1971-1977 (See Chapter II, page 6).

The report, Sources of Increase in Budget Review Hospital Expenditure in Canada 1961-1971, confirms that higher wages accounted for the major share of total expenditure increase 51 percent over the period.[41] However, the study does not attempt to present a comprehensive picture of the labour input. The possible quantitative effects of shifts in labour composition to more highly skilled and hence more highly remunerated personnel are only touched on and described in general terms.[42]

Evans attempts to show that wage inflation is the main reason for hospital cost increases in Canada and implies that an increasingly unionized work force is the root cause of spiralling wage rates and costs. His argument focuses on the dramatic increase in hospital workers' wages per paid hour from 1965-1971 which rose 29.9 percent faster than wages generally.[43] He admits that the industrial composite weekly wage was still greater than the hospital average wage at the time of the study, which seems to confirm the "catch-up" hypothesis.

Two studies, published in 1971 and 1977, attempt to examine wage change by employment category within the hospital labour force and relate such changes to wages in similar occupations elsewhere in the economy. The earlier one examines the period 1962-1970 but its coverage both cross-sectionally and over time is far too limited to support any general conclusions.[44] The more recent publication contains a section which compares the wages of seventeen hospital occupations with those paid in other industries in the same community for approximately similar occupations.[45] The report concluded that in 1975 the average weekly salary rates for dietary and housekeeping non-supervisory occupations were generally above those paid for comparable employment in industry. The opposite situation existed for maintenance and service occupations *except* in Edmonton, Vancouver and Montreal.

Average hospital wages in Alberta rank third highest in Canada and the total percentage increase in average monthly salary rates from 1966-1975 place the province second only to British Columbia.[46] At the same time, the province enjoys a buoyant economy, a low unemployment rate, more hospital beds per 1,000 population than any other province and a high minimum wage. These factors, no doubt, have affected wages and costs in the hospital industry.

The determination of hospital wages still remains a major unresolved problem and the whole issue of unionization and collective bargaining in the public sector is now the focus of considerable concern. Restrictions to unionization in the public and quasi public sector (health and education) were removed in the 1960's without establishing explicitly a wage policy that took into account the relationship between this sector and the rest of the economy. As Couisineau and Lacroix point out:

> The new unions were faced with an employer whose demand for labour was probably the most inelastic in the economy, who was in a better position to redistribute the income than any economic agent in the private sector, who wished to increase its own importance in the economy and finally whose decisions were not subject to market sanction.[47]

The effect of this was to put both government and employers in the quasi-public sector in a vulnerable position. Where the work force is pyramidal in structure, as it is in the hospital industry, with many workers earning relatively low wages, union militancy can be expected. Where workers can force the closure of hospitals through the withdrawal of their services, as professional nurses can, the problems of determining appropriate relative wage rates through the process of collective bargaining are compounded. Wage determination in the public sector may be one of the major social problems of our times but to equate collective bargaining with rising hospital costs provides too facile an answer which tends to gloss over the more fundamental concerns of financing hospital care.

Considerably more empirical research is needed to determine the effects of collective bargaining on hospital costs. Little is known about the impact of collective bargaining on general manpower utilization. For instance, are wage settlements an important factor in the adoption of more efficient management practices in order to reduce labour costs? What has been the effect on attrition rates and absenteeism? How has the composition of the hospital labour force changed and why? Has the continuation or completion of catch-up any relevance to future cost trends? The research is notable in its failure to examine these aspects of labour costs and their relation to collective bargaining.

1.6 Purpose and Scope of This Study

Although unionization and collective bargaining have been one of the factors singled out to explain rising hospital costs, little evidence exists in the literature for the effect of unionization and collective bargaining on labour costs in the hospital industry. However, given the phenomenal rise in hospital costs in recent years and the fact that labour costs comprise a major share of hospital operating costs, there is intuitive concern that unionization and collective bargaining are closely related to the surge in hospital costs. The major purpose of this study is to attempt to determine the extent to which unionization and collective bargaining have contributed to the rise of costs in public general and auxiliary hospitals in Alberta. The time frame of the study is limited to the period 1971-1977, a time frame that embraces (1) the unionization of many hospital workers in the public hospital sector; (2) the evolution of bargaining structure; and (3) the use of the collective bargaining system.

1.6.1 Unionization and Collective Bargaining in Alberta Hospitals

The unionization of hospital employees is a fairly recent phenomenon which has expanded significantly over the past ten years. Initially, general service workers and operating engineers were organized. Subsequently, in the late 1960's and early 1970's, nurses and nurses' aides joined the collective bargaining movement with their respective provincial associations serving as the bargaining agent. More recently, paramedical personnel have banded together for labour relations purposes. With the vigorous expansion of the union movement in the hospital sector, it is generally thought that in time virtually all employees (with limited exceptions) will be represented by a union. According to a survey of the unions and the Alberta Hospital Association, carried out by the investigator, it appears that approximately 80 percent of hospital employees in every conceivable classification (with the exception of management) were unionized in 1977. This high degree of unionization among hospital workers is in sharp contrast to the general labour force where only about 30 percent of workers are certified to bargain under the Alberta Labour Act.

1.6.2 Bargaining Units

In an exhaustive study of bargaining unit determination in Alberta from 1966-1976, Kennedy notes that the health care sector provided some of the most complex and difficult bargaining unit questions faced by the Alberta Board of Industrial Relations (ABIR).[48] The ABIR which functions as an administrative tribunal is empowered under the Alberta Labour Act to review all applications for certification by a group of employees and to alter them and set guidelines for dealing with future applications for certification. It is well understood that this process itself, i.e., the establishment of appropriate bargaining units can lead to increased labour costs. Since labour costs comprise a major share of hospital operating costs, the employer is likely to favour a bargaining structure that produces as much predictability in the wage cost figure as possible. The avoidance of whipsaws and other activities associated with smaller units is important as is the avoidance of the higher cost of administering a fragmented structure. Unfortunately, the structure of the work force in hospitals does not lend itself to stable bargaining unit structure primarily because the workers are fragmented by the technical devision of labour and different career aims.

Two major events, the arrival of a new union, the Health Sciences Association of Alberta (HSAA) in 1972, and an action lodged by the Alberta Human Rights Commission in 1974 forced the ABIR to reassess its certification practices. In May 1977, a formal directive was issued by the ABIR in a serious attempt to rationalize bargaining units in the Hospital and Nursing Home industry. Five possible bargaining units were identified according to the functional contribution of employees and comprised the following categories:

1. Professional Nursing Care;
2. Auxiliary Nursing Care;
3. General Support Services;
4. Paramedical Technical; and
5. Professional Paramedical Support.

Thus an examination of these issues: rising hospital operating costs; the extent to which labour costs have contributed to rising operating costs; and the extent to which unionization, collective bargaining and bargaining structure has contributed to higher labour costs are relevant to a clearer understanding of the relationship between labour costs and the cost inflation process in the hospital sector.

1.7 Methodology

In order to compare reported changes in labour costs with settlements in the collective bargaining system, an historical time series was constructed from selected financial and statistical information for the period January 1971 to December 1977, from the Alberta Hospital Services Commission Monthly Information (AHSC 160) and Financial (AHSC 161) Reports. The information was collected on a bimonthly basis over 42 points in time on all public general (acute care) and auxiliary hospitals funded through the Department of Hospitals and Medical Care (AHMC). Depreciation, interest and other capital costs were not included in the data base. Since these components of cost vary across hospitals in an unsystematic way, their absence facilitated the analysis which was carried out. Hence, operating costs in this study are defined as wages and salaries and supply costs only. The analysis proceeded on two levels and included two major classifications of the data. First, by considering financial and statistical information in acute care and auxiliary hospitals grouped into eleven categories by bed size and second by categorizing information into proxies of the bargaining units that now prevail in the hospital sector, it was possible to examine and compare eleven discrete hospital groups with respect to rising costs and the relationship, if any, to unionization and collective bargaining.[48]

Hospital groups. The hospital groups corresponded to those used by AHMC as part of their management information system as shown in Table 2.

TABLE 2

Hospital Groups

Hospital Group	Rated Bed Capacity	Type of Institution
1	1 - 14	Acute Care
2	15 - 24	Acute Care
3	25 - 30	Acute Care
4	31 - 34	Acute Care
5	35 - 49	Acute Care
6	50 - 59	Acute Care
7	60 - 99	Acute Care
8	100 - 399	Acute Care
9	400 and over	Acute Care
0	1 - 99	Auxiliary
Y	100 and over	Auxiliary

Bargaining unit categories. The second classification of information was purely experimental in nature and it included the assignment of wages and salaries and paid hours to bargaining unit categories which would best approximate the functional descriptions of the five bargaining units previously enumerated in this chapter. These bargaining unit describtions are detailed in Information Bulletin No. 4, a publication of the Alberta Board of Industrial Relations.

Once the data were categorized, descriptive statistical methods were used to analyze the time series constructed on *each hospital* *group*. Hence, it was possible to make comparisons within groups and among hospital groups. No significance testing was carried out because of data limitations. Major areas of examination which were carried out include:

1. Trends, movements and composition of total operating costs .
2. Relationship of total operating costs and labour costs to input, output and utilization indicators which included patient days, percentage occupancy and paid hours.
3. Changes in the quantity and distribution of manpower using the bargaining unit categories as components of manpower.
4. Relationship of unionization and wage settlements in the bargaining units on the cost of hospital care.

1.8 Organization of the Study Report

The study report is divided into five main chapters and three appendices. Chapter II reviews basic trends in hospital operating costs and labour costs in Alberta hospitals. Chapter III describes the bargaining units, including the wage and salary movements in each of the bargaining units over the period of the study. In Chapter IV the methodology of the historical time series is presented. The final chapter contains a summary of the analysis and the conclusions of the study. Appendix A details the monthly wages and salaries of hospital employees in Alberta from 1971-1977 while Appendix B provides a brief synopsis of the relative and absolute gains (uncorrected for inflation) that selected occupations achieved during this period. Appendix C comprises summary tables of total annual operating costs, labour costs, patient days and paid hours by hospital groups.

FOOTNOTES

CHAPTER I

[1] Economic Council of Canada, *Sixth Annual Review* (Ottawa: Queen's Printer, 1969).

[2] James E. Bennett and Jacques Krasney, "Health Care in Canada A Series on the Nation's Health," *The Financial Post*, March 26, 1977, 4. Reference to a Series appearing in *The Financial Post*, March 26 - May 7, 1977.

[3] *Ibid.*

[4] *Ibid.*

[5] *Sources of Increase in Operating Expenditure of Budget Review Hospitals in Canada, 1961-1971* (Health Economics and Statistics Branch, Department of National Health and Welfare, December, 1973).

> p. 1 - "A varietyof measures may be used to indicate the growth in expenditure on hospital care. Budget review hospital operating expenditure as a percentage of the Gross National Product increased from 1.75 percent to 1961 to 2.70 percent in 1971. As a percentage of personal health care expenditure, (here defined to include the cost of all hospital services, physicians' services, dentists' services and prescribed drugs), it increased from 44 percent in 1961 to 49 percent in 1971. More direct indicators also show rapid increases in hospital expenditure. For the period 1961 to 1971, the average annual rate of growth of total budget review hospital operating expenditure was 14.28 percent, of per capita expenditure, 12.39 percent; and of the average cost per patient day, 10.91 percent."

[6] *Hospital Statistics Volume II*, "Expenditures, Revenues, Balance Sheets," 1975, Ottawa (Catalogue No. 83-228).

[7] "Gordon Miniely explains the government's thinking on health care," Calgary Herald, August 11, 1978, 5.

[8] Alberta Hospital Services Commission, Annual Report, Edmonton: Hospital Services Commission, 1977.

[9] Three major theories of hospital inflation have been advanced: (1) Demand - Pull Hypothesis; (2) Cost Reimbursement Inflation; and (3) Labour Cost - Push Inflation. See K. Davis "Theories of Hospital Inflation: Some Empirical Evidence," The Journal of Human Resources 8 (Spring, 1973), 181-201 for a review of these theories.

[10] Martin S. Feldstein, "Hospital Cost Inflation: A Study of Non-profit Price Dynamics," American Economic Review, 61 (December, 1971), 853-72. Also, The Rising Cost of Hospital Care, (Washington: Information Resources Press, 1971).

[11] Robert G. Evnas, "Beyond the Medical Marketplace: Expenditure, Utilization and Pricing of Insured Health in Canada," in National Health Insurance: Can We Learn From Canada, ed. by S. Andreopoulos (New York: John Wiley and Sons, 1975), 141.

[12] Harry Greenfield, Hospital Efficiency and Public Policy (New York: Praeger Publishers, 1973, 12.

[13] Jack R. Huddleston and Timothy J. Tyson, Contributing Factors to Cost Inflation in Hospitals Which Expand (Wisconsin Department of Health and Social Services, April, 1976), 14.

[14] The management orientation to reducing hospital costs is a pervasive theme of Volume II - Task Force Reports on the Cost of Health Services in Canada (Queen's Printers, Ottawa, 1969). Sixty-three recommendations were made by a committee to improve the operational efficiency of hospitals ranging from the licensing of managers to creating incentives for efficiency.

[15] M. Feldstein makes an important distinction between "technical efficiency or productivity," which has to do with the relation between the quantity of outputs produced by inputs and "economic efficiency" which refers to producing a given output at least cost. The first, technical efficiency, is a physical measure, and it is conceivable that there might be a divergence between

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the two measures. For a more detailed discussion of this distinction and an application to hospital costs, see M.S. Feldstein, Economic Analysis for Health Service Efficiency: Econometric Studies of the British National Health Service (Volume 51 of Contributions to Economic Analysis) (Amsterdam: North Holland Publishing Company, 1967).

[16] See Victor R. Fuchs, The Service Economy (New York: National Bureau of Economic Research, 1968) and Production and Productivity in Service Industries, ed. by Victor R. Fuchs (New York: National Bureau of Economic Research, 1969). These two publications contain relevant material on the conceptual and statistical difficulties encountered in measuring output and productivity increases in service industries related to health care.

[17] Robert G. Evans, "Behavioural Cost Functions for Hospitals," Canadian Journal of Economics, 4 (May, 1971), 191.

[18] Judith Lave and Lester Lave, "Hospital Cost Functions," The American Economic Review, 60 (March, 1970), 379-395, and John Carr and Paul Feldstein, "The Relationship of Cost to Hospital Size," Inquiry, 4 (April, 1967), 45-65. These are but two articles of the abundant research in this area.

[19] Ronald G. Ehrenberg, "Organizational Control and the Economic Efficiency of Hospitals: The Production of Nursing Services," The Journal of Human Resources, 9 (January, 1974), 22.

[20] Ibid., 23.

[21] Robert G. Evans, "Behavioural Cost Functions for Hospitals," Canadian Journal of Economics, 4 (May, 1971), 200.

[22] For a discussion of this theory, particularly as it applies to urban services, see W.J. Baumol, "Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis, American Economic Review, 57 (June, 1967), 415-426.

[23] Ky Ro, "Anatomy of Hospital Cost Inflating," Hospital and Health Services Administration, 22 (Summer, 1977), 75-87.

[24] Edward H. Wright, "Cost Containment and Resource Management in Hospitals in Canada," (unpublished paper, Alberta Hospitals and Medical Care, 1979), 16.

[25] Ibid.

[26] It is now well understood that an important way of making cost comparisons or grouping hospitals is by similarity of care mix. See Robert G. Evans and Harvey D. Walker, "Information Theory and the Analysis of Hospital Cost Structure," Canadian Journal of Economics, 5 (August, 1972), 398-418.

[27] Martin S. Feldstein, "The High Cost of Hospitals," The Public Interest, 44 (Fall, 1978), 42.

[28] "Reduce Health Care Demands, urges premier," Edmonton Journal (June 9, 1978), D1.

[29] Martin Feldstein has written widely on rising health care costs. For his views on the reasons for rising hospital costs see the following articles: "The High Cost of Hospitals and What to Do About It," The Public Interest (Fall, 1977), 40-54. The Rising Cost of Hospital Care (Information Resources Press, 1971) and "The Medical Economy," in Scientific American, 229 (September, 1973), 157-159.

[30] Ivan Illich, Medical Nemesis (London: Marion Boyars Publishers Limited, 1975).

[31] Lee, M.L., "Interdependent Behaviour and Resource Misallocation in Hospital Care Production," Review of Social Economy, 30 (March, 1972), 84-95.

[32] Fottler, M., "The Union Impact on Hospital Wages," Industrial and Labour Relations Review, 30 (April, 1977), 343.

[33] There are a number of reasons for rising wage rates according to Davis: (1) a "catching up" of hospital wages with those of comparable occupations, (2) increasing unionization or the threat of unionization, (3) tight labour market conditions; and (4) a change in the composition of hospital employees to more highly skilled personnel. See K. Davis, "Theories of Hospital Inflation: Some Empirical Evidence," The Journal of Human Resources, 8 (Spring, 1973), 181-201, for an analysis of the labour-cost push theory of inflation which incorporates these four factors as variables in the multiple regression equation.

[34] David S. Salkever, "Hospital Wage Inflation: Supply Push or Demand Pull," Quarterly Review of Economics, 15 (Autumn, 1975), 33-48.

[35] Richard U. Miller, Brian B. Becker and Edward B. Krinsky, "Union Effects on Hospital Administration: Preliminary Results from a Three State Study," Labour Law Journal (August, 1977), 517.

[36] M. Fottler, "The Union Impact," 354.

[37] S. Altman, "Health Care Spending in the U.S. and Canada" in National Health Insurance, 193.

[38] Although the U.S. hospital industry is still largely organized in a private charitable and proprietary fashion, both the large percent of hospital budgets which are publicly derived, principally from the medicare and medicaid programs, as well as the growing importance of issues such as equal access to health care have helped to contribute to a developing notion of hospitals as public sector institutions. Therefore, the opportunity for cost pass through may be as relevant in the U.S. as in Canada.

[39] H. Greenfield, Hospital Efficiency, 7.

[40] M. Feldstein, "The High Cost of Hospitals," 43. The figures for Alberta are to be found in Chapter II of the paper, p. 6.

[41] Sources of Increase, 26.

[42] The growth of hospital personnel have been unevenly distributed by occupational category. The general trends were:

(i) an absolute decline of hospital students attributed almost totally to a decline of nursing students reflecting a shift away from intramural hospital education for nurses but there was a significant increase in medical students;

(ii) an important increase in the proportion of medical employees;

(iii) a slight decrease in the proportion of other professional and technical employees.

Sources of Increase, 22.

[43] Robert E. Evans in National Health Insurance, 147.

[44] *Salaries and Wages in Canadian Hospitals 1962 to 1970* (Health Research Division, Department of National Health and Welfare, Ottawa, Canada, February 1971). Various factors influencing hospital pay rates, such as minimum wage legislation are discussed in this publication.

[45] *Salaries and Wages in Canadian Hospitals 1962-1975* (Health Research Division, Department of National Health and Welfare, Ottawa, Canada, April, 1977), v.

[46] *Ibid.*, 76, 78. For comparative purposes the average salary rates of nineteen hospital occupations are ranked both by a point system and by weighted average monthly salary in order to determine a provinces relative position in respect to average salary rates. The percentage increase calculation is determined from sixteen hospital occupations which are then ranked by a point system.

[47] Jacques Couisineau and Robert Lacroix, *Wage Determination in Major Collective Agreements in the Private and Public Sectors* (Economic Council of Canada, Ottawa, 1977), 45.

[48] Albert Kennedy, *Bargaining Unit Determination in Alberta 1966-1977* (unpublished Master of Business Administration Thesis, University of Alberta, April, 1978), 115.

CHAPTER II

HOSPITAL OPERATING COSTS IN ALBERTA

> The largest single item of expenditure by the province continues to be the funding of hospitals in Alberta. . . . This growth in hospital costs is of continued concern to the provincial government and further efforts to reduce unnecessary expenditures and improve productivity will be sought in the years ahead.[1]
>
> The Honourable Gordon T. Miniely

Rising costs were a feature of the hospital industry prior to national hospital insurance and continue to plague the provincial economy today.[2] In the 1970's more vigourous efforts have been made by government to achieve cost control through changes in funding arrangements and participation in the Federal Anti-Inflation Program.[3] These efforts have met with limited success. The imposition of restraint guidelines in particular has led to further conflict between government, hospital boards and labour. The purpose of this chapter is to describe the basic trends in cost escalation in public general and auxiliary hospitals which operate within the Alberta provincial hospital system. The movements, rates of change and composition of total operating costs are discussed. Finally, operating and labour costs by hospital group category (as described in Chapter I) are reviewed to contrast and compare trends among groups.

2.1 Total Operating Costs

During the period 1971-1977 the total number of general and auxiliary hospitals increased from 157 to 159 institutions; at the same time the total operating costs for these institutions more than doubled. Total operating costs in 1971 were $167,298 million—by 1977 this figure had risen to $434,392 million.

TABLE 3

Total Operating Costs General and Auxiliary Hospitals
1971-1977
(000's of dollars)

Year	Total Operating Costs	% Change From Previous Year	Index
1971	$167,298	-	100.0
1972	188,942	12.9	112.9
1973	212,558	12.5	127.1
1974	256,120	20.5	153.1
1975	353,221	37.5	211.1
1976	401,045	13.5	239.7
1977	434,392	8.3	259.7

Source: Compiled from data provided by AHMC.

2.1.1 Movements in Total Operating Costs

Table 3 shows the persistent and rapid movements in total operating costs from 1971-1977. The increases in 1972 and 1973 are more gradual with some de-escalation in the growth rate in 1973. However, costs began to increase more rapidly in 1974. Inflationary trends that affected total operating costs in 1974 were even more dramatic in 1975. The rate of growth in 1975 of 37.9 percent was nearly double that experienced in 1974. Cost escalation moderated during 1976 and 1977, in large measure through the implementation of the Federal Anti-Inflation Program by the provincial government in which guidelines were extended to the public hospital sector. This restraint policy allowed for an eleven percent increase in the 1976 budget year and eight percent in 1977. Actual cost increases were 13.5 percent and 8.3 percent, respectively.

2.1.2 Sources of Increase in Total Operating Costs

Overall the increase in total operating costs in hospitals was the product of many factors including population growth, utilization, general price inflation, sectoral price inflation and changes in the service mix which are difficult to sort out and quantify individually. A major concern in Alberta was the proliferation of small general hospitals providing acute care services. These institutions, many less than fifty beds in size, were often the sole industry in a community, the primary source of employment and the only means of attracting a physician to the community.[4] However, the average percentage occupancy of small hospitals tends to be low as Table 4 clearly indicates. Thus, there is some evidence to suggest that there is an oversupply of beds in rural areas which may be a contributing factor in total operating cost increases.

TABLE 4

Average Percentage Occupancy, Public General Hospitals by Size Group, 1971-1977

Size Group Number of Adult's and Children's Beds	1971	1973	1975	1977[1]
1 - 24	68.7	64.0	58.0	60.2
25 - 49	68.6	64.6	63.3	59.8
50 - 99	70.3	65.0	69.0	64.6
100 - 299	70.6	77.0	74.0	69.6
300 and over	80.8	77.5	75.3	74.5

[1] Based on data derived from the Alberta Hospital Services Commission Monthly Information Reports for the nine month period April, 1977 to December 31, 1977.

Source: Annual Report, Alberta Hospital Services Commission for the years 1971-1977.

Another major concern is the overall utilization of hospitals in the province. Albertans had the highest hospital utilization rate in Canada in 1975—2346.2 patient days per 1,000 population compared to a Canadian average of 1999.3 patient days per 1,000 population.[5] Although the ratio of beds per 1,000 population decreased from 9.2 in 1971 to 8.0 in 1977, this was still significantly greater than the Canadian average of 7.0 beds per 1,000 population and suggests that the availability of hospital beds in Alberta may have created its own demand and costs.

2.2 Hospital Labour Costs

Discussions on rising hospital operating costs eventually centre on the labour cost component. Labour costs comprise the major share of hospital operating costs and have risen rapidly as Table 5 indicates. In 1971 total labour costs amounted to $128,435 million. By 1977 this figure had risen to $328,988 million. During this time, the share of total labour costs as a percentage of total operating costs ranged from a high of 76.8 percent in 1971 to a low of 74.5 percent in 1974.

2.2.1 Movements in Total Labour Costs

While labour costs rose rapidly, the annual rate of growth was uneven and did not account for all of the rise in operating costs as Figures 1 and 2 illustrate. From 1971 to 1975 there was an accelerating rate of growth in total labour costs culminating in an exponential rise in 1975. After 1975 there was a marked de-escalation in the growth rate with 1977 showing the lowest increase over the

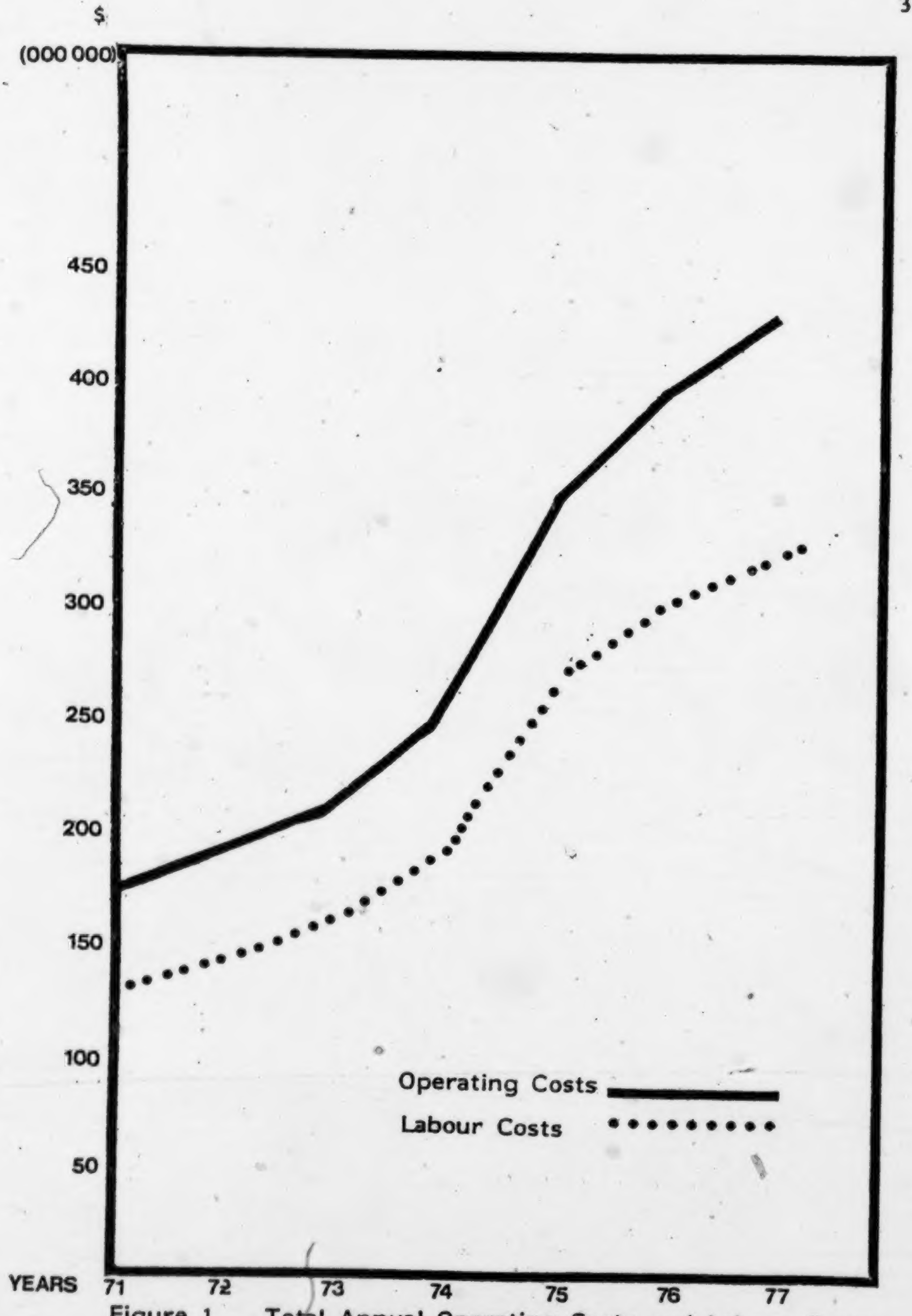

Figure 1 Total Annual Operating Costs and Labour Costs--Public General and Auxiliary Hospitals, 1971-1977

YEAR

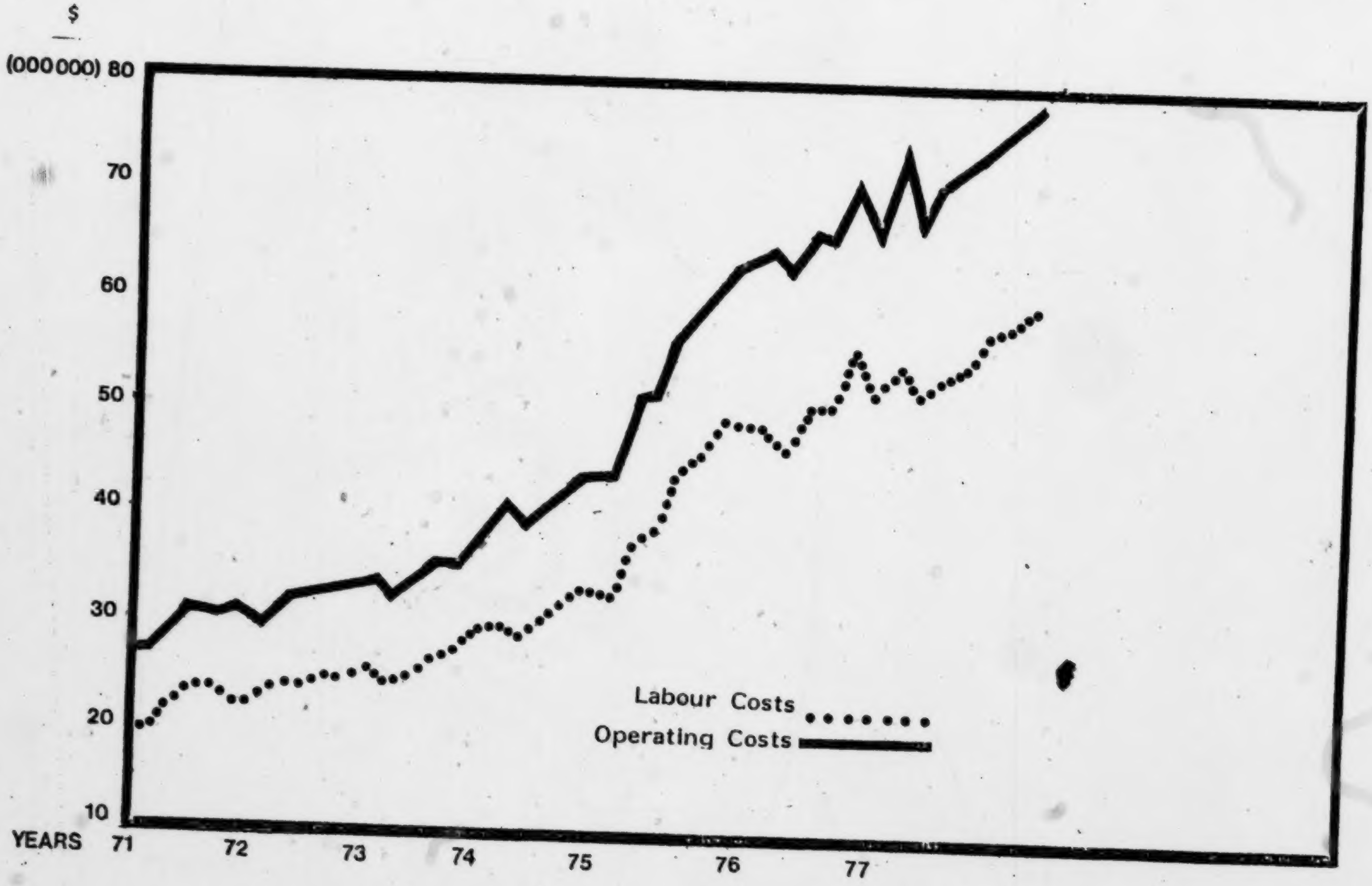

Figure 2 Bimonthly Total Operating Costs and Labour Costs--Public General and Auxillary Hospitals, 1971-1977

TABLE 5

Labour Costs General and Auxiliary Hospitals
1971 - 1977
(000's of dollars)

Year	Total Labour Costs	Percent Change Over Previous Year	Index	Labour Costs as a % of Operating Costs
1971	$128,435	-	100.0	76.8
1972	141,356	10.1	110.1	74.8
1973	160,183	13.3	124.7	75.4
1974	190,909	19.2	148.6	74.5
1975	270,831	41.9	210.9	76.7
1976	305,129	12.7	237.6	76.1
1977	328,988	7.8	256.2	75.7

Source: Compiled from data provided by AHMC.

period under study. It is also evident from Figures 1 and 2 that the gap between total operating and labour costs has widened in the latter years. This indicates that non-labour costs or total supply costs were increasing more rapidly than labour costs. By comparing the growth rates of these two components of total operating costs for all years of the study (Table 6) it can be demonstrated that the annual growth rate of total supply costs outstripped the annual growth rate of total labour costs in all years except 1973 and 1975.

TABLE 6

Public General and Auxiliary Hospitals--Annual Growth Rates in Total Supply Costs and Total Labour Costs, 1971-1977

Year	Total Supply Costs Percentage Change From Previous Year	Total Labour Costs Percentage Change From Previous Year
1971	-	-
1972	22.4	10.1
1973	10.1	13.3
1974	24.5	19.2
1975	26.4	41.9
1976	16.4	12.7
1977	9.9	7.8

Source: Compiled from data provided by AHMC.

2.2.2 Sources of Increase in Total Labour Costs

The dramatic increases in total labour costs are the result of three major factors. First, there have been substantial gains in wages and fringe benefits. In economic jargon this is known as the "price effect." Second, increases in paid hours or the "quantity effect" have contributed to the growth in total labour costs. Third, "the quality effect" or the shift of the hospital labour force to a more highly skilled and hence more highly remunerated labour force has increased labour costs. There is little confirmatory evidence to explain the precise relationship of any of these three factors to rising labour costs although the price effects are usually singled out as the principle cause of rising labour costs.

2.3 Trends in Operating Costs and Labour Costs by Hospital Groups

Operating costs and labour costs were examined in each hospital group to contrast and compare trends in cost increases among groups. It was reasoned that such an examination would also shed light on which groups had the greatest potential to contribute to the rise of total costs in the hospital sector. (Appendix C contains summary tables of this review.)

Operating Costs. The operating costs of all groups with the exception of Group 1 showed an absolute increase over the relevant time period. Group 1, however, experienced a decline in operating costs in 1977. Since hospitals can move in and out of groups within a given year, this was thought to be the most likely explanation for the decrease in costs in Group 1. The most dramatic increases in all groups occurred in 1975 with the exception of Group 3 which experienced the largest increase in 1977.

The level of operating costs in Group 9 was the highest compared to all other groups and consistently accounted for more than fifty percent of total operating costs in all years of the study. The number of hospitals in Group 9 varied from seven to eight hospitals, suggesting that these few large hospitals (400 beds plus) have the greatest potential to affect the absolute level as well as the rate of growth of total hospital operating costs. This was further borne out by the fact that while the largest number of hospitals is to be found in Groups 1 through 5—representing hospitals with less than 50 beds—the sum of operating costs in these groups was generally about twenty percent of Group 9 operating costs or about ten percent of total operating costs of the groups under study. The remaining 40 percent of total operating costs could be attributed to Groups 6, 7, 8, Y and 0.

Labour Costs. A similar situation was found in examining trends in rising labour costs among hospital groups. These trends generally paralleled increases in total operating costs with the greatest increases in labour costs occurring in 1975. Again, the exceptions were Groups 1 and 3 with Group 1 showing a decline in labour costs in 1977 and Group 3 showing a larger increase in 1977 rather than in 1975. Group 9 labour costs were the highest compared to all other groups and consistently accounted for more than 55 percent of total labour costs. About 45 percent of total labour costs could be attributed to the remaining ten hospital groups.

Labour costs as a percentage of operating costs. These were calculated for each hospital group in order to determine variations in the manpower component over time and among groups (Table 7).

TABLE 7

Gross Salaries and Wages as Proportion of Hospital Operating Costs (Excluding Interest and Depreciation) by Hospital Group
1971 - 1977

Group	1971	1972	1973	1974	1975	1976	1977
1	74.0	71.2	70.3	71.8	74.1	74.3	74.4
2	72.2	72.6	72.3	72.1	75.6	74.4	73.9
3	69.8	70.1	70.3	68.7	73.7	77.5	71.5
4	67.5	68.4	68.4	68.8	71.6	71.9	70.8
5	70.1	69.5	69.4	69.2	71.9	68.5	70.1
6	71.4	71.2	72.2	71.4	73.8	72.9	73.2
7	70.6	68.1	68.4	68.8	70.8	71.1	69.4
8	70.6	70.5	70.6	69.7	71.9	72.1	72.0
9	71.2	73.9	74.3	73.1	75.1	74.0	73.7
Y	74.2	73.3	72.2	69.8	72.5	74.1	74.8
0	70.4	67.9	67.9	68.7	70.1	70.0	69.2
All Groups	76.8	74.8	75.4	74.5	76.7	76.1	75.7

Source: Compiled from data provided by AHMC.

Although there was no consistent trend, generally speaking, there appeared to be a slight reduction in labour costs as a share of operating costs from 1971 to 1974; a peak in five of the eleven groups in 1975 followed by a peak in 1976 in four of the eleven groups. The remaining groups, Y and 1, peaked in 1977. Some inter-group differences were also evident. For instance, Group 9 which comprises the large teaching hospitals showed the highest mean value for labour costs as a percentage of operating costs. Group 0 comprising small auxiliary hospitals showed the lowest mean value.

2.4 Summary

Total operating costs have risen rapidly over the time of this study. Since labour costs comprise the major share of total operating costs, the labour cost component is identified as a key factor in this rise. However, by examining the growth rates of both labour and non-labour costs, it is evident that there have been strong inflationary trends affecting both components. While some success was achieved in moderating the rate of growth in labour costs as a result of the Anti-Inflation Program, the same cannot be said for non-labour costs which continued to accelerate in 1976 and 1977. In addition, it is evident that the potential to affect the rise in operating costs and labour costs resides with a small number of acute care hospitals in Group 9. The hospitals in this group provide the most medically advanced and labour intensive care compared to all other groups. They also are the most costly to operate. Hence, measures to temper the rise in costs should be directed at the hospitals in this group to achieve results.

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FOOTNOTES

CHAPTER II

[1] The Honourable Gordon T. Miniely in the Budget Address. *Hansard*, February 7, 1975.

[2] An excellent historical review of the Canadian health care sector is provided in *National Health Insurance: Can We Learn from Canada?* Ed. S. Andreopoulos (New York: John Wiley and Sons, 1975). See particularly Chapter I, "Historical Perspective" by Maurice Le Clair, 11-89.

[3] The conditions attached to the established programs are general in nature. First, the provinces must ensure that the expenditure in each of the program areas (Hospital insurance, medical care and post secondary education) is at least equal to the federal cash contributions in the respective area. Second, the broad conditions of portability, accessibility, comprehensiveness and universality which are contained in the federal Medical Care Act will apply to hospital insurance, to medicare and to extended health services. No program conditions are to be imposed on post secondary education in recognition of provincial constitutional responsibility.

The transfer will be accomplished by the federal government reducing its personal income tax rates and the provinces increasing their own rates to take up the vacated room. The revenue generated by the combined federal and provincial income taxes will not change. The net tax transfer in respect of established program financing will be 8,143 points of personal income tax and 1 point of corporation income tax transferred to the provinces in respect of the former post secondary education cost sharing arrangements. As a result of the transfer of personal income tax room, the provincial government will be proposing that Alberta's personal income tax rate increase from 26 percent to 38.5 percent of federal basic tax.

Federal contributions for extended health services such as nursing home intensive care, adult residential care, converted mental hospitals, health aspects of home care and ambulatory health care services previously conditionally cost shared under the Canada Assistance Plan will come under the new arrangements.

[4] Of the 128 general hospitals, two hospitals accommodated ambulatory care patients only (Radway, Demarais), eighty hospitals (62.5%) had fewer than fifty beds each and accounted for 18.7% of beds (2,206 of 11,820) and forty-six (35.9%) had more than 50 beds each and accounted for 81.3% of beds (9,614 of 11,820). The smaller hospitals cannot offer the wide range of patient services that are customarily provided by larger hospitals through the nursing department, pharmacy, laboratory, radiology, physical and occupational therapy, medical records, operating and delivery suites and the emergency department.

[5] The Calgary Herald, August 11, 1978, 5.

CHAPTER III

UNIONIZATION AND COLLECTIVE BARGAINING IN ALBERTA HOSPITALS, 1971 - 1977

The unionization of hospital employees emerged as a growing force during the period covered by this study. In 1965 only general service workers and tradesmen in large city hospitals were unionized. Ten years later unions and employee associations had organized almost every conceivable classification of hospital employee and wages and working conditions were determined largely through the process of collective bargaining. As a result of the increased union activity in the hospital industry, the Alberta Board of Industrial Relations (AIBR) was confronted with complex and difficult bargaining unit questions. Kennedy has stated the problem succintly:

> . . . the AIBR had to . . . decide what was the acceptable bargaining structure for the health care industry in the province. Fundamental questions involving the representation rights of individuals and groups, as well as the membership basis of several unions had to be and were answered.1

The purpose of this chapter is to provide a descriptive review of the unions active in the Health Care field, their memberships, the bargaining structure in the industry and the wage and salary movements that occurred during the period under review.

3.1 The Unions

The desire for collective bargaining rights and certification under the Alberta Labour Act led to a kaleidoscope of union organizing activity in the hospital industry. Diverse and competing unions vied to represent groups of hospital employees and increase the scope of their membership. In the process, new unions were formed and established organizations disappeared. Adding to this activity were a variety of employee associations which through voluntary recognition agreements carried out a labour relations function on behalf of their members. Accurate information on the degree of unionization in the hospital industry and the number of employees covered by collective agreements or voluntary recognition was difficult to obtain and even more difficult to verify.[2] For instance, a survey of the five major unions representing hospital employees indicated a total combined union membership of approximately 22,000 employees in hospitals throughout the province while the employers association, the AHA, stated that only 11,000 hospital employees were organized for collective bargaining purposes. However, in 1977 the vast majority of the 28,000 employees in the hospital groups under study were paid according to the prevailing rates established in provincial bargaining since these rates are recommended by the AHA as personnel policies to the hospitals.[3] Therefore, with limited exceptions, virtually all hospital employees in Alberta are covered by collective agreements. A brief description of the nine bargaining agents active in the hospital sector between 1971-1977 follows:

3.1.1 Alberta Association of Registered Nurses (AARN)

The AARN is primarily a professional association which represented registered and graduate nurses in labour relations through a bargaining arm comprised of local Staff Nurse Divisions affiliated with the AARN. On a historical note, the first certification granted to nurses by the AIBR was in 1965 at the Calgary General Hospital. By 1977, 7,000 nurses were represented in 110 bargaining units affiliated with the AARN.

3.1.2 United Nurses of Alberta (UNA)

In 1977, the UNA was formed to carry forward a collective bargaining function for nurses. This was an independently funded organization completely separate from the AARN which retained its function as the professional association for nurses. UNA conducted the first strike of nurses in provincial general hospitals in 1977 and was the only union in Canada during the period of wage and price controls to compromise a decision of the Anti-Inflation Board (AIB). The position of the Supreme Court of Alberta was that the AIB had lost its jurisdiction when nurses were ordered back to work and therefore, the nine percent arbitration award was allowed to stand. Membership in UNA is estimated at 7,000 registered and graduate nurses and largely comprises those nurses formerly represented by the AARN.

3.1.3 Canadian Union of Public Employees (CUPE)

This organization is a national, Canadian only union, and one of the largest unions in Canada. CUPE represents a diverse group of approximately 8,000 general service workers in Alberta hospitals ranging from unskilled aides to highly skilled tradesmen. Membership includes cooks, housekeepers, janitorial staff, maintenance staff, porters, ward aides, orderlies, office staff, steam engineers, electricians, painters and plumbers.

3.1.4 Service Employees International Union (SEIU)

SEIU is an international union affiliated with the American Federation of Labour—Congress of Industrial Organizations (AFL-CIO). In the hospital sector, SEIU competes with CUPE to represent general service workers; however, its membership is much smaller and is estimated at 500 employees in a handful of hospitals.

3.1.5 International Union of Operating Engineers (IUOE)

This is an international AFL-CIO union which represents steam engineers and some maintenance trades in a few Alberta hospitals. The IUOE has lost members to larger hospital wide units such as CUPE and SEIU and no information was available on current membership.

3.1.6 The Alberta Division Employee Pharmacists Association (ADEPA)

ADEPA is an outgrowth from the retail field in Alberta and represents about 50 pharmacists in about 20 hospitals. The union has also represented non-certified units of pharmacists in negotiations with the Alberta Hospital Association.

3.1.7 Alberta Union of Public Employees (AUPE)

Formerly the Civil Service Association of Alberta which in part officially represented all employees in Crown hospitals, AUPE was constituted in 1976 to represent employees who came under the purview of the Public Service Employee Relations Act. Membership comprises about 2,500 employees and includes a broad spectrum of professions and occupations in four hospitals.

3.1.8 Health Sciences Association of Alberta (HSAA)

The HSAA was organized as a union to represent the balance of remaining non-union paramedical professional and technical groups, many of which had bargained on a voluntary recognition basis with the Alberta Hospital Association. There are approximately 1,600 members in this union which represents laboratory technologists, respiratory technologists, radiology technicians, medical records librarians, ECG technicians, medical photographers, dietary technicians and other occupations which have training programs based in institutes of technology rather than in the universities.

3.1.9 Alberta Association of Registered Nursing Assistants (AARNA)

Formerly called the Alberta Certified Nurses Association, and recently renamed the Alberta Association of Registered Nursing Assistants, this organization was voluntarily recognized as the bargaining agent for Certified Nurses Aides only, in 1973. In 1975, the Association was formally recognized by the Board of Industrial Relations as a certified bargaining agent. By 1976, the 4,000 members of this union included certified nursing aides, registered nursing orderlies, orthopedic technicians, nursing attendants and operating room technicians in hospitals throughout the province.

Voluntary Recognition. On the basis of voluntary recognition agreements, the Alberta Hospital Association representing the employer in province wide hospital bargaining also negotiated with the Alberta Registered Dieticians Association, (ARDA) the Alberta Society of Occupational Therapists (ASOT) and the Association of Chartered Physiotherapists of Alberta (ACPA) on matters of salaries and working conditions. The total membership of these three organizations is estimated at 250 employees.

3.2 Bargaining Unit Determination

Fundamental to the Canadian industrial relations system is the concept of compulsory collective bargaining which guarantees the right of organization and provides for certification by an administrative tribunal— the Labour Board. While the structure of the bargaining unit is often a crucial issue for both employers and employees, it is an issue ultimately determined by the Labour Board. Boards can and do exercise extensive discretionary power to determine the unit of employees for which the union is to be recognized as exclusive bargaining agent. As Herman notes: ". . . certification decisions of the Labour Relations

Boards greatly influence the type of units that emerge."[4] Since the unit is an integral part of bargaining structure, Labour Boards, through the certification process, play a major role in determining the collective bargaining structure of any industry. A rational and stable bargaining structure in the hospital industry is critically important for the following reasons:

1. In providing an essential service, hospitals wish to reduce labour management strife. Since the proliferation of bargaining units increases the possibility of strike it is preferable to decrease the number of units.

2. The cost of conducting many sets of negotiations is a significant drain on the resources of both management and labour.

3. The existence of many units increases the potential for "whip sawing."

3.3 Evolution of the Board of Industrial Relations Policy

With many health professions and occupations attempting to exercise collective bargaining rights, certification policy became a crucial issue in the 1970s. Two major events, the arrival of a new union, the Health Sciences Association of Alberta seeking to organize many types of hospital workers and an action lodged by the Alberta Human Rights Commission forced the Alberta Board of Industrial Relations to reassess its certification practices which had tended to be inconsistent in the hospital sector. The application for certification by the HSAA in 1972 so exacerbated the situation that the Alberta Hospital Association sought postponement of the proposed hearing of the Board in respect to the application and immediately established a Task Force made up of member hospitals to undertake a study on health care personnel and prepare a report for presentation to the Board of Industrial Relations. As a result of the deliberations of the Task Force, a brief was submitted to the Board of Industrial Relations in 1972. The brief stressed that it was imperative that a reasonable and workable policy concerning hospital bargaining units be established in advance of increasingly active labour organizing activity within the hospital sector. To avoid a multiplicity of bargaining units in the hospital sector, the brief recommended that hospital employees should be placed in four basic units and only these four should be certified as appropriate for collective bargaining in a hospital. The units recommended comprised: (1) Nursing; (2) Paramedical; (3) Service; and (4) Auxiliary Nursing. While guidelines in bargaining units were not issued by the Board of Industrial Relations at the time, the reasons for the decision of the Board on the HSAA certification matter made several significant statements which indicated future policy direction.

On January 27, 1976, a landmark decision by Justice MacDonald interpreting the Province's Individual Rights Protection Act ordered the Royal Alexandra Hospital to cease contravening the Act by paying orderlies more than aides for substantially similar work.[4] As long term solutions to the problem, Mr. Justice MacDonald suggested that:

1. The Board of Industrial Relations review existing certifications to determine the appropriateness of the existing units for collective bargaining;
2. The two bargaining agents (AACNA and CUPE) apply to consolidate their certification; and
3. The Alberta Labour Act be amended to provide the machinery to overcome the existent situation.

3.4 Current Board Policy

In May 1977, a formal directive was issued by the Board. Five possible bargaining units were identified according to the functional contribution of employees and were described as follows:

Professional Direct Nursing Care — a unit comprised of all employees of the employer providing direct professional nursing care or instruction therein as evidenced by membership in the AARN, or as a graduate of a recognized school of nursing, and would encompass all such employees employed by the employer up to and including the level of head nurse or its equivalent

Auxiliary Nursing Care — a unit comprised of all employees of the employer providing direct auxiliary nursing care and could include employees classified as certified nursing aides, nursing aides, nursing assistants, registered orderlies, orderlies, ward aides and operating room technicians.

General Support Services — a unit comprised of all employees of the employer providing general support activities including employees employed in activity areas such as clerical, office trades, food service, housekeeping and custodial.

Paramedical Technical — a unit comprised of all employees of the employer providing qualified technical patient care support services as evidenced by completion of a prescribed course of study and required membership or eligibility for membership in an association or group formed for the purpose of regulating standards of competence in the technical field of activity and in some cases, employees directly related to such technical services. Examples of employees that could fall into this group are employees employed as medical record librarians, medical records technicians, remedial gymnasts, radiological technicians, medical laboratory technologists, respiratory technologists, certified combined technicians, dietary technicians, EEG technicians, medical photographers and psychiatric nurses.

Peofessional Paramedical Support — a unit comprised of all employees of the employer providing qualified professional paramedical support services as evidenced by university graduation and required membership in an association or group formed for the purpose of regulating standards of competence in the professional field of activity. Examples of employees that could fall into this unit are dieticians, pharmacists, medical social workers, occupational therapists, physiotherapists, laboratory scientists, clinical chemists and medical psychologists.

By the end of 1977, four unions had emerged as dominant players in hospital sector labour relations and included:

1. United Nurses of Alberta—Professional Nursing Care Unit;
2. Canadian Union of Public Employees—General Support Services Unit;
3. Health Sciences Association—Paramedical Technical Unit; and
4. Alberta Association of Registered Nursing Assistants—Auxiliary Nursing Care Unit.

The Professional Paramedical Unit remained unorganized.

3.5 Wage and Salary Movements

Appendix A details the wage and salary rates of each bargaining unit from 1971-1977. These rates were for full time employees and do not include overtime premium rates, shift differentials and the monetary value of fringe benefits such as group insurance and sick benefits. Average percentage increases have been calculated at each effective date for each bargaining unit and are set out in Tables 8 to 14. It should be noted that these are unweighted arithmetic means and do not take into account the number of employees in each classification or the distribution of employees across the grid in a particular classification.

3.5.1 Professional Direct Nursing Care

Table 8 shows the average percentage increases in the salary levels of registered and graduate nurses from 1971-1977.

TABLE 8

Professional Direct Nursing Care Wage and Salary Movements as Percentage Increases January 1971 - January 1977

Employee Representative	Effective Date	Average % Increase On The Grid (1)	Range of % Increases On The Grid
AARN - UNA	Jan./71	-	-
	Jan./72	5.5	4.7 - 6.4
	Apr./73	10.7	8.8 - 14.5
	Nov./73	3.5	2.9 - 4.0
	Apr./74	6.7	5.7 - 7.9
	Nov./74	13.2	10.4 - 16.7
	Jan./75	16.2	15.0 - 17.6
	Jan./76	8.0	8.0
	Jan./77	9.0	9.0

[1] Represents unweighted average increase up to January 1976. Across the board increases of 8.0% and 9.0% at Jan./76 and Jan./77 respectively would represent a weighted average increase.

Source: Calculated from data contained in Appendix A.

These increases range from a low of 5.5 percent in 1972 which was the mid-point in a two year contract to a high of 16.2 percent in 1975, a time of rapidly escalating inflation throughout the Canadian economy. The 13.2 percent increase in November of 1974 relates to a $100 across the board increase at each point on the grid in recognition of this inflation and was negotiated retroactively as part of the 1975 settlement. The 8.0 percent increase effective January 1976 reflects the first year of wage and price controls (this amount was the maximum allowable increase), while the 9.0 percent increase at January 1977 is the result of an arbitration award by Justice Bowen in the aftermath of the first nurses' strike in the province. During the early 1970s, contracts were two years in duration, however, this changed in 1975 with the signing of a one year agreement. The 7 3/4 hour working day was also implemented at this time.

3.5.2 General Support Services

Up to 1975 the wage and salary rates quoted for CUPE in Appendix A represent the monthly salary compensation of employees in a major hospital in the province. Thereafter, the salaries quoted are the result of a Master Agreement between the AHA and CUPE and are applicable to many hospitals in the province. Table 9 indicates that from 1971-1975 wages increased at frequent intervals as a result of phased in increases over the life of predominantly two year contracts. Subsequent contracts were one year in duration. Average

TABLE 9

General Support Services -- Wage and Salary Movements as Percentage Increases January 1971 - January 1977

Employee Representative	Effective Date	Average % Increase on The Grid (1)	Range of % Increases On the Grid
CUPE	January 1971	n.a.	n.a
	October 1971	4.1	3.3 - 4.9
	April 1972	4.2	3.4 - 5.0
	October 1972	4.2	3.4 - 5.0
	January 1973	9.0	6.1 - 18.1
	August 1973	1.3	0.8 - 1.6
	January 1974	6.3	3.9 - 8.0
	October 1974	1.7	1.1 - 2.1
	January 1975	3.4	3.1 - 4.2
	April 1975	38.7	11.3 - 53.1
	April 1976	8.0	7.9 - 8.1
	April 1977	6.0	6.0

[1] Represents unweighted average increase up to April 1976. Across the board increases of 8.0 percent and 6.0 percent at April 1976 and April 1977 respectively would represent a weighted average increase.

Source: Calculated from data contained in Appendix A.

percentage increases ranged from 1.7 to 9.0 percent from 1971 to 1975 and from 6.0 to 38.7 percent from 1975 to 1977. There was substantial variation in percentage increases both over the grid and in different classifications within the unit which reflects CUPE's interest in maintaining job rate differentials. The highest average percentage increase occurred in 1975. After this, increases were within the Anti-Inflation Program guidelines.

3.5.3 Auxiliary Nursing Care

Average percentage increases for auxilliary nursing personnel ranged from a low of 4.3 percent in 1971 to a high of 17.8 percent in

TABLE 10

Auxiliary Nursing -- Wage and Salary Movements as Percentage Increases (Unweighted)
January 1971 - January 1977

Employee Representative	Effective Date	Average % Increase on The Grid(1)	Range of % Increases On the Grid
AARNA-ACNA	January 1971	n.a.	n.a.
	October 1971	4.3	3.8 - 4.9
	April 1972	4.4	3.8 - 4.9
	October 1972	4.2	3.8 - 4.7
	April 1973	5.7	5.2 - 6.2
	December 1973	5.3	4.9 - 5.8
	August 1974	5.1	4.9 - 5.5
	January 1975	9.6	7.5 - 12.5
	April 1976	17.8	13.0 - 24.7
	April 1977	5.5	5.5

[1] Represents unweighted average increase up to April 1977. Across the board increases of 5.5 percent at April 1977 would represent on weighted average increase.

1976 (Table 10). The large increase in 1976 reflects a decision of the Alberta Supreme Court which ruled that it was discriminatory to pay nursing aides less than orderlies. At the time, nursing aides and orderlies were represented by different bargaining agents. Subsequently, the hospitals were forced to pay the same rates to both occupations and the AHA was required to adjust the wage rates of nursing aides to coincide with those of nursing orderlies. This award to the nursing aides further eroded the historical differential between registered nurses and nursing aides and set the stage for the militant actions of professional nurses in 1977.

3.5.4 Paramedical Technical

As Table 11 indicates, this unit is a relative newcomer. The first agreement was effective April 1973 and average percentage increases range from 4.5 in January 1974 to 38.2 percent in January 1975. After this, the one year contracts negotiated in 1976 and 1977 increase according to the maximum allowable increase under the Anti-Inflation Program.

3.5.5 Professional Paramedical Support

Although this unit is not formally organized, Tables 12 to 14 provide a review of increases over the time of the study. The pattern that emerges coincides with developments in other units; namely more frequent but smaller increases during the early 1970's, an extremely

TABLE 11

Paramedical Technical -- Wage and Salary Movements
as Percentage Increases
April 1973 - January 1977

Employee Representative	Effective Date	Average % Increase on The Grid (1)	Range of % Increases On the Grid
HSAA	April 1973(2)	n.a.	n.a.
	January 1974	4.5	2.6 - 6.0
	October 1974	5.0	3.2 - 6.9
	January 1975	38.2	27.4 - 51.9
	January 1976	8.0	8.0
	January 1977	6.0	6.0

[1] Unweighted average percent increase up to January 1976. Across the board increases of 8.0 percent and 9.0 percent at January 1976 and January 1977 would represent a weighted average increase.

[2] First collective agreement.

Source: Calculated from data contained in Appendix A.

large increase in 1975 and the maximum allowable increases in a time of restraint. In addition as with all other units, the working day decreased in 1975 from eight hours to seven and three-quarter hours.

3.5.6 Relative and Absolute Increases

An examination of salary rates over the time of this study indicates that employees with the lowest salaries in 1971 obtained

TABLE 12

Professional Paramedical Support -- Wage and Salary Movements as Percentage Increases January 1971 - 1977

Employee Representative	Effective Date	Average % Increase on The Grid (1)	Range of % Increases On the Grid
ADEPA	January 1971	n.a.	n.a.
	October 1971	4.7	4.4 - 5.0
	July 1972	4.1	3.9 - 4.3
	April 1973	6.0	5.8 - 6.2
	April 1974	6.0	5.8 - 6.4
	January 1975	28.8	26.0 - 30.9
	January 1976	8.0	8.0
	January 1977	6.0	6.0

[1] Unweighted average percent increase up to January 1976. Across the board increases of 8.0 percent and 9.0 percent at January 1976 and January 1977 would represent a weighted average increase.

Source: Calculated from data contained in Appendix A.

greater percentage increases in salaries than employees in better paid occupations. Although the lower paid occupations usually received a proportionately greater increase than the higher paid occupations, in many cases the absolute dollar increase was smaller. Appendix B provides a comparison of relative and absolute increases both by bargaining unit and by selected occupations within the bargaining

TABLE 13

Professional Paramedical Wage and Salary Movements as Percentage Increases January 1971 - January 1977

Employee Representative	Effective Date	Average % Increase on The Grid (1)	Range of % Increases On the Grid
ACPA	January 1971	n.a.	n.a.
	October 1971	2.9	2.5 - 3.3
	July 1972	3.5	3.0 - 4.1
	April 1973	9.9	9.2 - 10.8
	November 1973	3.2	2.9 - 3.7
	April 1974	5.7	5.2 - 6.3
	January 1975	34.8	33.1 - 36.0
	January 1976	8.0	8.0
	January 1977	6.0	6.0

[1] Unweighted average percent increase up to January 1976. Across the board increases of 8.0 percent and 6.0 percent at January 1976 and 1977 would represent a weighted average increase.

Source: Calculated from dated contained in Appendix A.

unit. This comparison shows that the Professional Nursing Care unit and the Professional Paramedical Support unit achieved the highest absolute dollar increases ranging from $539 to $647 over the period of the study. On the other hand, the Auxiliary Nursing Care Unit which achieved the highest percentage increase of all the units, namely, 252 percent realized an absolute dollar increase of $546.

TABLE 14

Professional Paramedical Support -- Wage and Salary Movements as Percentage Increases January 1971 - January 1977

Employee Representative	Effective Date	Average % Increase on The Grid (1)	Range of % Increases On the Grid
ARDA	January 1971	n.a.	n.a.
	August 1971	3.7	2.5 - 4.0
	April 1972	4.0	3.9 - 4.1
	April 1973	8.3	8.0 - 9.2
	April 1974	8.0	7.8 - 8.1
	January 1975	26.6	25.3 - 29.2
	January 1976	8.0	8.0
	January 1977	6.0	6.0

[1] Unweighted average percent increase up to January 1976. Across the board increases of percent and percent at January 1976 and 1977 would represent a weighted average increase.

Source: Calculated from data contained in Appendix A.

3.6 Summary

The period 1971 - 1977 was a time of intense union activity in the hospital industry. Almost every conceivable health profession and occupation attempted to obtain collective bargaining rights and certification under the Alberta Labour Act. To avoid a multiplicity of bargaining units and the inherent instability that such a structure would present in an essential services industry, the ABIR was faced with the formidable task of rationalizing the bargaining structure in the industry. Five units were ultimately defined comprising:

1. Professional Direct Nursing Care ;
2. Auxiliary Nursing Care;
3. General Support Services ;
4. Paramedical Technical and
5. Professional Paramedical.

The wage and salary movements of each of these groups were reviewed. General observations were:

1. The greatest wage settlements for all bargaining units occurred in 1975

2. Prior to 1975 increases do not follow any consistent pattern either among units or within units.

3. The increases in 1976 and 1977 were the maximum allowable under Anti-Inflation Program Guidelines with the following exceptions. The Auxiliary Nursing Care Unit won large increases as a result of a decision of the Supreme Court of Alberta and the Professional Direct Nursing Care Unit conducted a provincial strike to win increases greater than

the guidelines would allow. Thus the Nurses were able to regain some of the wage differential (when compared to Nursing Aides) that had been eroded by the Supreme Court decision. Other effects of these wage settlements such as changes in the distribution and quantity of manpower will be looked at in the following chapters.

4. Although the lower paid occupations usually obtained greater percentage increases in salaries, in many cases the absolute dollar increase was smaller.

FOOTNOTES

CHAPTER III

[1] A. Kennedy, Bargaining Unit Determination in Alberta 1966-1976. (Unpublished Master of Business Administration Thesis, University of Alberta, April, 1978), 115.

[2] Information that follows has been obtained from a variety of sources including interviews with the unions and the Alberta Hospital Association. In some instances the information from both sources did not coincide; therefore, some adjustments have been made by the investigator. Published and unpublished material provided by the A.H.A. and the unions was used in an attempt to provide the most accurate information. However, it would be a fair comment to say that information on unionization in the health care industry is shrouded by secrecy. Some of the most useful papers included the work by A. Kennedy previously cited and unpublished papers by R. Heise "Diversity of Bargaining Agents," presented at the Seminar on Law and Industrial Relations, Division of Health Services Administration (University of Alberta, June 16, 1976) and T. Seamen, "The Structure of Collective Bargaining in the Alberta Hospital Industry," (unpublished paper Division of Health Services Administration, University of Alberta, Fall, 1978).

[3] According to the data provided to the investigator by AHMC, there were 21,232 full time employees and 6,642 part time employees as of December 31, 1977 in the hospital groups under study.

[4] E.E. Herman, Determination of the Appropriate Bargaining Unit (Ottawa: Queen's Printer, 1966), 1.

[5] Supreme Count Trail Division, No. 87584, Justice MacDonald, January 27, 1976. Rates of Pay--Discrimination: Action Lodged by Seven Nursing Aides, D. Gares et al.

Decision: 1. The employment in tasks and duties of female personnel at a rate of pay less than that paid male employees engaged in identical duties constitutes discrimination odious to the provisions of the Individual Rights Protection Act.

2. The existence of a collective agreement establishing the differential complained of made prior to the coming into force of the statute is not a defence. The Act deals with all offences in existence and offending agreements are affected.

3. Separate certifications and contracts arrived at by separate bargaining are not fact which would normally justify the differences in rates of pay.

4. The burden of proof is upon the Applicant who alleges such.

CHAPTER IV

METHODOLOGY AND ANALYSIS

The following is a decription of the methods employed in the implementation and analysis of this study. Included in this chapter are discussions of the (1) research plan; (2) data sources; (3) classification of data including procedures followed in categorizing information by bargaining units, and (4) factors considered in data analysis.

4.1 Research Plan

The overall plan of the study was to proceed from the general to the specific and involved an examination of time series data to determine (a) the total movement of hospital operating costs from 1971-1977; (b) to determine the extent to which labour costs have contributed to these increases and (c) to attempt to determine the extent to which increased labour costs are the result of unionization, bargaining unit determination and collective bargaining.

The examination of the data proceeded on two levels. First, by considering financial and statistical information on acute care and auxiliary hospitals grouped into eleven categories by bed size and second, by categorizing information into proxies of the bargaining units that now prevail in the hospital sector, it was possible to examine and compare eleven discrete hospital groups with respect to rising costs and the relationship to unionization, bargaining unit determination and collective bargaining. Specifically, the study included review and examination of the following:

1. movements in total operating and labour costs;
2. labour costs as a share of total operating costs;
3. wage settlements by bargaining unit;
4. distribution of labour costs among bargaining units, and the changes in this distribution;
5. relationship of paid hours, patient days and percentage occupancy to total operating and labour costs;
6. relationship between wage increases in the bargaining units and changes in labour costs by hospital groups.

As noted above, this study of rising hospital operating and labour costs and the possible explanation for the increases in these costs from 1971-1977, involved not only consideration of wage increases but also examination of variations in manpower utilization and bed utilization among hospital groups and their relationship to rising costs. It is well understood that labour costs increase as a result of three factors: (1) wage and fringe benefit increases (price effects); (2) increases in paid hours (quantity effects); and (3) changes in the composition of manpower a more highly skilled and hence more highly remunerated labour force (quality effects). What is not well understood is the relationship of unionization and collective bargaining to these three factors. In addition to these considerations, hospitals likely vary in their flexibility to effect changes in these component factors of labour costs. This would depend on a variety of factors including the extent of a medical specialization, case-mix, labour productivity, manpower use and the capacity and utilization rates of the hospitals under study. However, given the limited amount of information available it would be possible to examine only certain aspects of hospital operations and their relationship to total operating and labour costs.

Administrative data provide the data base for the study. These data collected by the provincial funding agency, Alberta Hospitals and Medical Care, as part of its management information system are primarily descriptive in nature and yield a large amount of detailed information on levels of activities, utilization and input costs. Financial information is used primarily to monitor the on-going usage of funds in hospitals on a "bottom-line dollar" basis to determine that the financial support payments are covering the hospital's expenditures. In relying solely on this data base, the assumption is made that hospitals within hospital groups are engaged in similar activities. Furthermore, information regarding the number of employees at each wage rate or the cost of fringe benefits--information relevant to changes in labour costs—was not available as part of the data. The collection of such data available only from the hospitals, was beyond the scope of this study. In recognition of these limitations, recommendations are made in the concluding chapter of the study.

As noted previously, this may be classified as a time series study since it was based on standard information collected at forty-two points in time from a predetermined population. Further, the study was basically descriptive and exploratory in an attempt to determine certain facts about labour costs in the hospital industry. Statistical inferences were only attempted to test the regression analysis because (1) there were few theories regarding the effect of unionization, bargaining unit determination and collective bargaining on hospital labour costs (other than that unionization increases wages and hence labour costs) which could serve as a basis for attempting confirmatory analysis; (2) the study included the population of all acute care and auxiliary hospitals, funded through AHMC hence sampling was not employed; and (3) the manipulation of routine administrative data to provide proxies for bargaining units while experimental in nature did not lend itself to significance testing in the absence of more refined data. A description of the study and data sources follow in the next section.

4.2 Data Sources

Administrative data relating to selected financial and statistical information on all acute care and auxiliary hospitals grouped by bed size for the forty-two bimonthly periods beginning January-February 1971 and ending November-December 1977 were received on paper print out with a small portion on computer tape from AHMC. The data were retrieved from the monthly AHMC 160 and 161 reports which each hospital is required to submit in order that the provincial funding agency can monitor the usage of funds. The 1977 data corresponded to the most recent year for which data were available at the time the study was undertaken. It should be noted that the data provided to the investigator were bi-monthly and cumulative in nature. The reason for this was that monthly data collected through the 160 and 161 reports are routinely processed by hospital group every two months as part of the Indices Report Program (previously mentioned in Chapter I); therefore, it was more convenient for AHMC to provide the data in this manner.

The 160 return is essentially an information report which includes data on paid hours according to four major divisions: Nursing (including graduate nurses, psychiatric nurses, qualified nursing assistants, orderlies and other nursing staff); Diagnostic and Therapeutic (Laboratory, ECG and EEG, Pharmacy, Radiology, Physical Medicine and Rehabilitation, Social Work, Respiratory Therapy and Other Special Services); Educational Programs (Nursing and other); and Administrative and Supportive (General Administration, Medical Records and Hospital Library, Dietetics, Laundry, Linen, Housekeeping, Plant and other). A range of physical outputs is also collected including patient days (by ward unit and short and long term), admissions, discharges, deliveries, surgical suite visits, laboratory tests done and referred out (on a standard unit basis), radiological films taken, pounds of laundry processed and meal days produced. The 161 form serves as a financial statement and includes data on expenditures categorized by Gross Salaries and Wages and Other Expenditures. Information relating to offset revenues and provincial payments also comprises part of the report.

To carry out the study, the following information was requested for each hospital group on a bimonthly basis: total operating, labour and supply costs; gross salaries and wages and paid hours for personnel (listed under categories of Nursing, Diagnostic and Therapeutic, Educational Programs, and Administrative and Supportive); full time and part time employees on staff at month end (available from 1973-1977 only); average percentage occupancy and adult and children patient days.

While similar information was available from the HS-1 and HS-2 federal reports which are submitted annually by each hospital and are even more comprehensive and detailed than the provincial data, (particularly with respect to manpower data), the provincial data offered the advantage of being collected more frequently—monthly versus annually for the Federal statistics. It was thought that this frequency and the opportunity to construct a time series over forty-two discrete data points would greatly enhance the sensitivity of the study. At the same time there were certain disadvantages with using the provincial data. First, the Department in its concern with maintaining confidentiality of information would only provide a small portion of the information requested on computer tape with the remainder on paper copy. This required that the investigator manually retrieve and organize 40 separate items of information for each of the eleven hospital groups over each of the 42 points, an extremely time-consuming task. Second, the data had to be adjusted arithmetically because of its cumulative nature and then keypunched. Third, the collection of certain statistics and their identification with specific cell numbers had changed over the time of the study, therefore, numerous corrections in cell number designations had to be made in order to ensure that comparable data were being collected. Finally, a small number of actual errors were encountered in the data which could not be rectified nor could the reasons for these errors be identified. However, the influence of these deficiencies on study conclusions is expected to be small. Any misrepresentations of cost data would likely not be sufficient to change the direction of previous results given the very strong trends in rising costs that were evident throughout the study.

4.3 Classification of Data

Two major classifications of data were used in this study. Administrative data were provided by AHMC grouped by bed size. This enabled the investigator to contrast and compare hospital operations among hospital groups. In addition to this, the investigator assigned labour costs and paid hours to bargaining units to determine the relationship of labour relations activity to labour costs both within hospital groups and among hospital groups.

4.3.1 Hospital Groups

There were several reasons for analyzing data on the basis of hospital groups. The major one was that it was necessary to obtain financial and statistical information on Alberta hospitals in such a way that the subsequent analysis would be both practical and sensitive. Logistical considerations precluded analyzing information on each of the large number of acute care and auxiliary hospitals that comprise the hospital sector in Alberta. Analysis of total provincial hospital expenditures even if on a long time series basis would likely not yield the sensitivity that was required nor would it divulge information on the degree of flexibility and substitution that can occur in hospital operations. As indicated in the literature review, numerous researchers have attempted to explain inter-hospital cost variations on the basis of such factors as size, case mix, technology, and utilization. Since it was not possible in this study to group hospitals on the basis of similar case mix (one of the more popular explanations) or to differentiate between rural and urban hospitals, and/or teaching and non-teaching hospitals, the hospital groups defined by AHMC on the basis of bed size were used in this study. It was thought that the skill mix of labour inputs was likely to differ among hospitals and this grouping should result in greater homogeneity of inputs within each group. For instance, all large major teaching hospitals which provide as a rule "state of the art" medical technology and employ highly skilled personnel would fall into Group 9 which represents a rated bed capacity of 400 plus beds. A final consideration in obtaining grouped data on hospitals was that it was necessary to maintain the anonymity of the hospitals with respect to budget information in what is now a highly politicized and sensitive area. Thus, data classifications were according to the eleven hospital groups detailed in Chapter I.

4.3.2 Bargaining Units

An integral part of this study was the reconciliation of labour costs and paid hours according to the five bargaining unit descriptions established by the Alberta Board of Industrial Relations. The purpose of this classification and assignment of labour costs was to trace the movements in labour costs and establish their relationship, if any, to unionization and collective bargaining. In addition, this classification would serve as a useful proxy for the skill mix composition of labour.

The classification scheme undertaken provided one of the most difficult aspects of the study in that administrative data on hospital personnel are not collected on the basis of bargaining unit categories. Therefore, it was necessary to assign information on

Gross Salaries and Wages and Paid Hours to coincide as closely as possible with the functional descriptions and definitions of the five bargaining units. The bargaining units for the purposes of this study were constructed as follows:

UNIT	PERSONNEL CATEGORY
1. Professional Direct Nursing Care	Graduate nurse
2. Auxiliary Nursing Care	Qualified Nursing Assistants and Orderlies
3. General Support Services	Dietitics, Laundry, Linen, Other Nursing Staff, Housekeeping, Plant Operations and Maintenance
4. Professional Paramedical	Physical Medicine and Rehabilitation, Social Work, and Pharmacy
5. Paramedical Technical	Laboratory, ECG and EEG, Radiology, Medical Records and Hospital Library, Respiratory Therapy and Psychiatric Nurses

The remaining data were assigned to a Residual Component and further classified into categories which included General Administration, Specialized Services, Education, and Other (including Ancillary Operations). Using this classification scheme it was possible to account for 100 percent of labour costs and paid hours in each hospital group. However, it should be noted that the labour costs and hours assigned to the bargaining units included information on inappropriate personnel. For instance, some of the Diagnostic and Therapeutic areas such as Radiology and Laboratory would also include labour costs and paid hours on clerical or housekeeping staff. On the other hand, the Professional Direct Nursing Care unit includes only graduate nurses salaries, therefore, this representation of the bargaining unit was considered to accurately reflect the actual unit description and collective bargaining experience. While it is acknowledged that the bargaining units represented in this study are for the most part proxies only and may not coincide with the real world, it is suggested that the assignment of wages and salaries in this manner affords a better opportunity to attempt to trace labour costs in the hospital industry than the present data collection system which bears no resemblance to actual labour relations activities.

4.4 Data Analysis

First, as part of the general review of hospital group operations, regression analysis was carried out in an attempt to determine if there were any significant relationships between costs and factors related to input (paid hours); output (patient days); and utilization (average percentage occupancy rate). While it has been shown that hospital operating costs and labour costs are rising and that labour costs parallel the rise in operating, little attention has been given to examining these events in the light of hospital group activity. While detailed analysis of in-patient structure is required to make valid inter-hospital comparisons, (Evans and Walker, 1972) such information was not available in this study; moreover, hsopitals were already grouped according to what was assumed to be similar activity—similar rated bed size. This part of the study then only seeks confirmation that patient days, occupancy rate and paid hours are good predictors of labour costs and operating costs. Thus the following relationships were analyzed by Hospital Group:

1. Total Operating Costs (f) Paid Hours
    Patient Days
    Average Percentage Occupancy

2. Labour Costs (f) Paid Hours
    Patient Days
    Average Percentage Occupancy

Second, it was decided to test the more specific relationship of labour costs by bargaining unit and paid hours. This would be confirmatory evidence to show that costs increase as paid hours increase and further that the assignment of hours of each bargaining unit coincided correctly with the assignment of costs in the purely experimental bargaining unit construction. The regression analysis carried out, therefore, was:

3. Labour Costs by Bargaining Unit Proxy (f)	Paid Hours by Bargaining Unit Proxy

Occupational Mix. Another possible use of the bargaining unit categories was to examine changes in the occupational mix of hospital workers over the time of the study by reviewing the distribution of labour costs by bargaining unit and the changes in this distribution. It was thought that this examination would shed light on the notion that hospital labour costs have increased with the shift to a more highly skilled and hence more highly remunerated work force. In addition, the substitution effects as relative wages increase, i.e., between registered nurses and nursing aides could be examined. Thus the following calculation was carried out:

4. $$\frac{\text{Labour Costs by Bargaining Unit Proxy (f)}}{\text{Total Labour Costs by Hospital Group}} \times 100$$

Tracing Labour Cost Increases. Finally, an attempt was made to trace labour cost increases in accordance with the implementation of the various collective agreements—again by bargaining unit. It was reasoned that the labour costs applicable to a specific bargaining unit would plateau after a wage increase, rise with a new increase and plateau again but at a new and higher level. The difference between the two levels would represent the additional new dollars required by a hospital group to implement a new collective agreement. To determine these incremental labour costs, the costs attributable to each bargaining unit category were plotted over 42 points and percentage increases (or decreases) were calculated at each point. These increases were compared with the percentage increases enumerated in Chapter III to determine if there were any similarities which could be accounted for as a result of the implementation of the collective agreement.

4.5 Summary

This chapter has explained the methodology used in the course of this study. Statistics relating to hospital operating and labour costs, paid hours, average percentage occupancy and patient days were examined by hospital group. Regression analysis was carried out to determine if there were any significant relationships between hospital operating costs and labour costs and factors relating to input, output and utilization. Labour costs relating to proxies of the bargaining units that now prevail in the hospital industry were plotted bimonthly from 1971-1977 in an effort to trace the costs of a new collective agreement. The present data base of AHMC does not provide for the tracking of costs related to the implementation of wage settlements. Therefore, a new approach was sought which would possibly overcome the deficiency of the provincial funding agency data base. The following chapter presents the results of the data analysis.

CHAPTER V

RESULTS AND CONCLUSIONS

Results from this examination of rising hospital operating costs and the extent to which unionization and collective bargaining may have contributed to rising hospital operating costs are presented according to the following three parts in the analysis:

1. An examination of total operating costs and labour costs by Hospital Group and their relationship to:
    - (a) total paid hours
    - (b) patient days
    - (c) average percentage occupancy rate.
2. The distribution of labour costs by bargaining unit to changes in this distribution.
3. A comparison of the wage settlements by bargaining unit to changes in labour costs by bargaining unit in each Hospital Group.

5.1 Relationships of Selected Hospital Group Characteristics to Operating Costs and Labour Costs

Given the strong trends in rising costs during the period under study, there are likely many factors that contributed to the increases in costs./ Examination of patient days, paid hours and average percentage occupancy rate in relation to rising hospital operating and labour costs provides information regarding the influence of these Hospital Group characteristics on costs. Of particular interest is the opportunity to examine Hospital Groups for any shifting patterns of significance with size group changes. Tables 15 and 16 set out the regression results of this part of the analysis while the following section discusses these results.

5.1.1 Patient Days

It has been well established by numerous investigators (Feldstein and Schuttinga 1977, Greenfield 1973 and Evans 1971) that patient days are a notoriously poor measurement of hospital output. Nevertheless, this study proceeded with an analysis of this statistic on the assumption that the rise and movement in total costs should bear some relationship to patient days, particularly if this statistic increases. Interestingly, patient days actually decrease in seven of the eleven hospital groups. The summary tables in Appendix C detail the changes in patient days by Hospital Group during the period under study. Hospital Groups experiencing decreases in this statistic were Groups 1, 3, 4, 6, 7, 8, and 9. There are two possible reasons for declining patient days. First, the utilization of acute care beds declined as more auxiliary and nursing home beds became available for the elderly and those requiring less intensive care. Second, it is possible that there were more admissions during this time and that the length of stay was on the average shorter leading to decreases in patient days. Since information was not requested on the number of admissions, this statistic is not part of the data base and there is no way of confirming that this did happen. It should be noted that baby patient days were collected but not included in the patient day statistic. Preliminary evidence indicates that there is no large increase in baby patient days. Although this statistic was not examined in great depth, baby patient days decrease in some Hospital Groups, remain relatively constant in most other groups and increase slightly in the remaining groups.

Patient days and total operating costs. In this part of the analysis operating costs by Hospital Group are the dependent variable and patient days the independent variable. A significant relationship ($p. \leq .0500$) was found in Groups 2, 3, 4, 5, and 8. At the same time Groups 2 and 5 experienced patient day increases while Groups 3, 4, and 8 experienced patient day decreases. The only discernible trend among Hospital Groups is that a statistically significant relationship is more common in those Groups representing the small acute care hospitals.

Patient Days and Labour Costs. In reviewing the regression analysis on labour costs and patient days by Hospital Group an identical situation has arisen. Groups 2, 3, 4, 5, and 8 show statistically significant relationship while the remaining Hospital Groups do not. This observation tends to confirm the close relationship of operating costs to labour costs and suggests that those Hospital Groups experiencing declining patient days are not adjusting inputs to shifts in hospital output.

5.1.2 Average Percentage Occupancy Rates

It has been shown that running hospitals at higher occupancy rates will save some operating costs. For instance, an increase of five percentage points cuts operating costs by about one percent or less (Evans 1971). Total operating costs and labour costs were regressed against average occupancy rates calculated for each of the 42 bimonthly periods in an effort to determine if there were meaningful relationships between this statistic which measures utilization and rising costs. At the same time it was observed that there was a slight downward trend in average percentage occupancy rates in most of the Hospital Groups during the study including Groups 1, 3, 4, 5, 6, 7, 8, and 9. It is possible that this trend simply reflects a shorter length of stay per admission, but again, there is no way of confirming that this is the case.

Average Percentage Occupancy Rate and Operating Costs. As Table 15 indicates there are statistically significant relationships ($p \leq .0500$) in Groups 3, 5, 7, 8, 9, and 0. Some problems were experienced in Group 2 which could not be identified, therefore, the result of the regression analysis on this Hospital Group is not available. Overall, there is a statistically significant relationship in six of the eleven Hospital Groups which indicates the average percentage occupancy rates are slightly more closely related to operating costs than patient days were found to be and that utilization of hospitals (using average percentage occupancy rate statistics) may have greater potential for understanding and predicting rising operating costs over time than patient day statistics.

Average Percentage Occupancy Rate and Labour Costs. An identical situation to the foregoing is found when labour costs by Hospital Group are the dependent variable and average percentage occupancy rate the independent variable. Table 16 shows that statistically significant relationships occur in Groups 3, 5, 7, 8, 9, and 0, (Group 2 has a statistically insignificant result and it is likely that a similar situation for operating costs would have occurred had a result been available.) An interesting development in reviewing these results is that there are significant relationships both among Hospital Groups representing small hospitals and large hospitals.

TABLE 15

Relationships of Hospital Group Characteristics to Operating Costs (1)

Hospital Group \ Independent Variables (2)	Patient Days	Average Percentage Occupancy Rate	Paid Hours
1	.3248	.3309	.4955
2	.0001	n.a.	.0000
3	.0090	.0001	.4304
4	.0271	.1239	.0000
5	.0001	.0008	.0000
6	.2325	.2533	.0426
7	.1956	.0274	.0011
8	.0000	.0101	.0157
9	.3656	.0336	.0000
Y	.0944	.0800	.0000
0	.2081	.0002	.4574

p is statistically significant at .0500 or less.

[1] Regression Analysis: Dependent variable was the operating costs of each Hospital Group for each of the forty-two data points.

[2] Independent variables refer to Hospital Group characteristics selected to examine general differences in Hospital Group operations as defined in Chapter IV, Section 4.1.

TABLE 16

Relationships of Hospital Group Characteristics to Labour Costs (1)

Independent Variables(2) / Hospital Group	Patient Days	Average Percentage Occupancy Rate	Paid Hours
1	.2199	.1981	.5078
2	.0004	.8059	.0000
3	.0053	.0000	.5269
4	.0509	.0643	.0000
5	.0002	.0005	.0000
6	.1670	.3611	.0601
7	.3172	.0153	.0023
8	.0000	.0047	.0156
9	.2974	.0212	.0000
0	.1954	.0002	.3817

p is statistically significant at .0500 or smaller.

[1] Regression Analysis: Independent variable was the labour costs of each Hospital Group for each of the forty-two data points.

[2] Independent variables refer to Hospital Group characteristics selected to examine general differences in Hospital Group operations as defined in Chapter IV, Section 4.1.

5.1.3 Paid Hours

Total operating and labour costs were examined in relation to total paid hours for each Hospital Group. A statistically significant relationship between operating costs and paid hours was predicted on the basis that labour costs comprise the major share of operating costs and increases in paid hours would be reflected in both higher operating costs and labour costs. The Summary Tables in Appendix C show that increases in paid hours were experienced in Groups 2, 4, 5, 7, 8, 9, Y, and 0 over this period.

Paid Hours and Total Operating Costs. Table 15 shows that a meaningful relationship with respect to the regression analysis occurs in Groups 2, 4, 5, 6, 7, 8, 9, and Y. With the exception of Group 6, these Groups all experienced increases in paid hours. (At the same time it is interesting to note that Groups l, 3, 4, 6, 7, 8, and 9 experienced decreases in patient days). On the other hand, there is no relationship between operating costs and paid hours in Groups 1, 3, and 0. Groups 1 and 3 both experienced decreases in paid hours while Group 0 experienced an increase in paid hours.

Paid Hours and Labour Costs. An almost identical situation to the foregoing occurred when labour costs are the dependent variable and paid hours the independent variable. The one notable exception is that Group 7 does not show a statistically significant relationship between labour costs and paid hours even though it did so when operating costs were the dependent variable. The reasons for this are not clean and one can only speculate that there are either errors in the data or some unusual situations occurring during the period of the study.

5.1.4 Summary

The regression analysis described in this section of the paper was exploratory. Certain measures of input, output and utilization were examined in relation to operating costs and labour costs by Hospital Group in an attempt to discover meaningful relationships between these factors and costs and possibly shifting patterns of significance with respect to Hospital Group size changes. The implication is that there would be some flexibility among Hospital Groups in adjusting inputs and hence costs to shifts in utilization. The results of this part of the study indicate that paid hours are the best predictor of rising costs — eight of eleven Hospital Groups. The average percentage occupancy rate was significant in six of eleven Hospital Groups including Groups representing large and small size hospitals. Patient days were the least significant of the three factors studied. Only five of the eleven Hospital Groups shared a statistically significant relationship with respect to patient days and costs and this occurred principally in the smaller rated bed capacity Hospital Groups. In addition to the foregoing, it is evident that the hospital industry has experienced a decrease in patient days, a declining average percentage occupancy rate and increasing paid hours over the period under study. The reasons for these changes are not entirely clear. They could reflect a changing case-mix pattern in acute care hospitals. For instance, as hospitals provide services for the more acute types of illness, more inputs in the form of paid hours are required. The declining average percentage occupancy rate and decreases in patient days may simply reflect shorter lengths of stay as the elderly and those requiring less intensive types of care are transferred to other facilities, i.e., nursing homes. The above findings also suggest that the need for hospital beds and the pressure on these beds, particularly in the rural areas, is not as great as some have suggested even in the light of Alberta's boom economy and growing population.

5.2 Labour Costs by Bargaining Unit

This part of the analysis was carried out in two parts. The first part included regression analysis with labour costs by proxy bargaining unit as the dependent variable and paid hours by proxy bargaining unit as the independent variable. The purpose of this part of the analysis was to determine if there were any statistically significant relationships between costs and hours broken down to the level of the bargaining unit. The second part of the analysis consisted of calculating the distribution of Hospital Group labour costs by bargaining units. Since the bargaining unit description differentiate and categorize hospital manpower on the basis of such factors as the degree of professionalization, type of education and functional contribution (direct patient care or support staff), an important 'spin-off' of the assignment of wages and salaries to proxy bargaining units and residual components is the opportunity to examine quality shifts and substitution effects. Moreover, it is possible to do this for each Hospital Group to determine if there are any significant differences in manpower utilization. Hence, inferences can be drawn with respect to the flexibility of different sized Hospital Groups to potentially control labour costs. (Summary Tables in Appendix C provide data on this part of the study).

5.2.1 Labour Costs and Paid Hours by Bargaining Unit

In carrying out this part of the analysis all labour cost and paid hours were categorized and manually allocated to bargaining units or residual components as described in Chapter IV. It was possible to account for 100 percent of the labour costs in this manner, however, the experience with paid hours was less successful because of problems encountered in the reporting system. Therefore, in interpreting these results the investigator cannot always be certain that the paid hours in a proxy bargaining unit relate to the appropriate labour costs of that unit. Table 17 indicates that the majority of the relationships of bargaining unit labour costs

TABLE 17

Relationships of Labour Costs of Bargaining Units to Paid Hours (1) of Bargaining Units by Hospital Group

Hospital Group / Independent Variable(2)	Professional Direct Nursing Care Costs	Auxiliary Nursing Care Costs	General Support Services Costs	Professional Paramedical Costs	Paramedical Technical Costs
1	.5592	.0084	.7136	.7201	.0007
2	.0000	.0000	.0000	.0000	.0000
3	.1969	.0405	.0258	.0006	.0026
4	.0000	.0000	.0000	.0000	.0000
5	.0000	.0000	.0000	.0000	.0000
6	.0004	.3381	.0262	.0000	.0000
7	.0000	.7429	.2799	.0000	.0000
8	.2231	.0000	.3236	.0000	.0000
9	.0000	.0000	.0011	.0000	.0000
Y	.0000	.0000	.0000	.0000	.1127
0	.0000	.0000	.1907	.0010	.5928

p is statistically significant at .0500 or less.

[1] Dependent variables were the paid hours of each proxy bargaining unit category as defined in Chapter IV Section 4.3.2.

[2] Independent variables refer to salary and wage costs assigned to proxy bargaining unit categories as defined in Chapter IV Section 4.3.2.

to paid hours were statistically significant. Group 1 is a major exception in that no significant relationships are observed in any of the bargaining unit categories. These results are consistent with the previous findings on Group 1 (discussed at the beginning of this chapter) and suggest that this group may have unusual characteristics which are affecting the results. Groups 7, 8, and 0 show statistically significant results in only three of the five bargaining unit categories; however, the only observable pattern is that the results relating to the General Support Services unit are not significant. This is also the bargaining unit for which it was most difficult to assign wages and paid hours because of changes in the data base and it is possible that inaccurate data are affecting the results. The most substantial finding of this part of the analysis is that results are most often significant at the p = .0000 level. This confirms that the wages and salaries assigned to a bargaining unit category correspond to the paid hours assigned to that unit. Therefore, it appears that the extensive manual manipulation of data required in the course of this study was done for the most part without error.

5.2.2 Distribution of Labour Costs by Bargaining Unit

The study provides an opportunity to examine the distribution of labour costs by bargaining units and the changes in this distribution over the time of the study. This review provides information on changes in the hospital industry labour force and shows the responses of Hospital Groups to changes in relative wage rates as a result of a new collective agreement. Several general observations can be made. First, the labour costs assigned to the proxy bargaining unit categories account for more than 80 percent of labour costs in all Hospital Groups. This is likely a conservative figure since a substantial number of personnel assigned to the Residual components comprising General Administration, Specialized Services, Education and Other would more appropriately fall within the bargaining unit designations. Second, the proportion of labour costs attributable to the different bargaining units varies considerably among Hospital Groups. Third, the Professional Direct Nursing Care unit and the General Support Services unit, taken together, account for the largest portion of hospital labour costs--approximately 54 percent in Group 9 to about 75 percent in Groups 1 and 0. Fourth, there is a dramatic upward trend in costs attributable to both the Professional Paramedical Support unit and the Paramedical Technical unit which lends support to the notion that hospital care has become technical and requires more highly skilled personnel. Specific observations can be made on the trends that were evident in each of the bargaining unit categories and the Residual component.

Professional Direct Nursing Care. The labour costs attributable to the Professional Direct Nursing Care unit show large fluctuations among Hospital Groups. They range from 36.6 - 41.3

percent in Group 1; 28.5 - 30.3 percent in Group 9; and 18.9 - 20.3 percent in Group Y during the period under study. It is interesting to note that Group 9 which provides the most sophisticated and specialized care has a much lower proportion of total labour costs attributable to this unit category compared to Group 1. One reason for this is that total labour costs are distributed among a much wider range of professions and occupations in the large teaching hospitals that comprise Group 9. Further examination of the data shows the proportion of labour costs attributable to the Professional Direct Nursing Care unit declines from 1971-1976 in almost all Hospital Groups. This trend reverses itself in 1977 when this component of labour costs rises in all Hospital Groups. The figure for 1977 reflects a nine percent settlement (three percent higher than the other bargaining units) in the aftermath of the first nurse's strike in the province.

Auxiliary Nursing Care. The labour costs attributable to the Auxiliary Nursing Care unit vary considerable both among Hospital Groups and within these Groups. For instance, Auxiliary Nursing Care unit labour costs range from 4.4 - 8.8 percent in Group 1; 12.9 - 18.9 percent in Group 2; and 9.3 - 12.2 percent in Group 9. It is also obvious that there is an inverse relationship to Professional Direct Nursing Care unit labour costs. Substitution effects involving the two units are clearly evident in both the scattergrams produced in the course of this study and the Summary Tables contained in Appendix C. As the wage differential narrows between the two units (as a result of the Supreme Court of Alberta decision under the Individual Rights Protection Act) employers substitute professional nurses for auxiliary nurses, particularly in Hospital Groups with a larger rated bed capacity.

General Support Services. The labour costs assignable to the General Support Services unit are the largest component of hospital labour costs in six of the eleven Hospital Groups. This component of labour cost declines slightly in 1976 which suggests that hospitals tried to achieve some cost efficiencies subsequent to the large settlements received by this unit in 1975. Groups Y and O are the largest users of this labour component — 50.1 - 54.4 percent of total labour costs while Groups 8 and 9 are the smallest users — 22.3 - 26.2 percent of total labour costs.

Professional Paramedical Support. Labour costs attributable to the Professional Paramedical Support unit are generally quite constant within groups with the exception of Groups 8 and Y where there has been a substantial increase. Overall the proportion of the labour costs attributable to this unit varies from less than 1.0 percent in Group 1 to 7.3 percent in Group Y.

Paramedical Technical. The smallest proportion of labour costs attributable to the Paramedical Technical unit is to be found in Groups Y and 0 which comprise the auxiliary hospitals. This serves to point out that hospitals providing less intensive care simply do not provide diagnostic services to the extent that acute care hospitals do. The proportion of labour costs attributable to this unit ranges from 0.4 percent in Group Y to 16.2 percent in Group 9.

Residual Components. The proportion of labour costs assigned to the Residual components are not reviewed in great depth. However, there are two general observations that appear to be significant. First, General Administration labour costs account for about 6.0 - 9.0 percent of total labour costs in all Hospital Groups. There is also a slight decline in these costs in seven of the eleven Hospital Groups studied. This suggests that hospitals are not getting 'top heavy' administratively and that hospital management is successfully controlling this aspect of labour costs. Second, specialized services (which from 1976 are defined as special or newly approved programs)are a significant and growing share of total labour costs in Hospital Groups 8 and 9 only. These programs are generally the high cost high technology programs such as Perinatal Intensive Care and Renal Dialysis.

5.2.3 Summary

The analysis carried out in this section was based on the development of proxy bargaining units to coincide with actual labour relations activity in the hospital industry. This part of the study provides an opportunity to examine manpower utilization in the hospital industry by reviewing the distribution of labour costs by bargaining unit categories and the changes in this distribution over the time of the study. The results of this part of the analysis indicate that there are several major patterns and trends in manpower utilization throughout the hospital industry, as follows:

1. Two bargaining units, Professional Direct Nursing Care and General Support Services account for the largest portion of hospital labour costs.
2. Substitution effects involving the Professional Direct Nursing Care and Auxiliary Nursing Care units are clearly evident.
3. The proportion of labour costs attributable to the Professional Paramedical Support and Paramedical Technical units is rising.

Finally, the assignment of wages and salaries to the proxy bargaining unit categories appears to provide an acceptable way of examining the distribution of labour costs by bargaining units and the changes in this distribution.

5.3 Increases in Labour Costs Attributable to Unionization and Collective Bargaining

This part of the study attempts to trace those increases in labour costs which are the result of unionization and collective bargaining. To determine the incremental costs to the system of a new collective agreement, a review of the actual cost experience of each Hospital Group was undertaken. Scattergrams of the cost experience of each of the eleven Hospital Groups categorized according to the bargaining unit proxies were developed to determine the pattern of these increases. As discussed in Chapter IV, it was theorized that labour costs would plateau at new and higher levels over time--the difference between levels would represent the incremental costs of the collective agreement. However, the labour costs of each bargaining unit by Hospital Group tend to scatter wildly without any observable patterns almost without exception. In early 1971 there is a slight tendency towards the formation of changing plateau levels but this pattern quickly breaks down. At the same time the percentage increases (or in many cases percentage decreases) calculated from one bimonthly period to the next over the time of the study show no resemblance to the collective agreements that were implemented. This serves to dramatize some of the reporting problems which prevail in the hospital industry and which make it impossible to track labour settlements through the system. For instance, the labour costs in the July-August period were roughly double the previous two month experience. This situation reflects payments to personnel on holiday and the relief staff who replace them. Dramatic decreases in labour costs usually occur in the September-October period in most Hospital Groups. Other seasonal fluctuations also evident are increases in labour costs in January-February, a period characterized by higher average pecentage occupancy rates and more paid hours. These seasonal and cyclical fluctuations interfere with the methodology used to identify labour cost increases due to price effects only. The following sections summarize the conclusions of the analysis and provide recommendations in the light of the many problems that were encountered in carrying out this study.

5.4 Conclusions

The overall plan of the study was to proceed from the general to the specific and involved an examination of time series data to determine

(a) the total movement of hospital operating costs from 1971-1977;

(b) to determine the extent to which labour costs have contributed to these increases; and

(c) to attempt to determine the extent to which increased labour costs are the result of unionization, bargaining unit determination and collective bargaining.

In view of this plan the following conclusions of the study are further classified into general conclusions and specific conclusions.

5.4.1 General Conclusions

As a general consideration in response to the question "Why Do Costs Rise"? certain factors were examined with respect to the operating characteristics of the eleven Hospital Groups. These characteristics were measures of input, output and utilization and included paid hours, patient days and average percentage occupancy rate. Regression analysis was carried out to determine whether relationships exist between rising hospital operating and labour costs and these Hospital Group characteristics. Several general observations can be made, as follow:

1. During the time that operating and labour costs more than doubled, patient days have decreased in seven Hospital Groups; paid hours have increased in eight Hospital Groups; and average percentage occupancy rates have declined in nine Hospital Groups.
2. Statistically significant relationships are more prevalent when paid hours are the independent variable of the eleven Hospital Groups indicating that this factor is closely related to rising labour costs.
3. Operating costs and labour costs in Group 9 (seven to eight hospitals) consistently account for more than 50 percent of their respective costs in all years of the study.

4. Average percentage occupancy rates and patient days are significantly related to operating costs and labour costs in six and five of the eleven Hospital Groups respectively, indicating that these factors have some importance in the process of rising hospital costs and likely affect the total number of paid hours in each Hospital Group. However, the relationships between these factors and paid hours is not explored.

In spite of the wage increases won by hospital workers over the time of the study, hospitals appear to be more seriously concerned with increasing the labour input rather than achieving cost efficiencies by maintaining present levels or even reducing paid hours. The reasons for doing so may be a concern for improving the "quality of care" where quality is measured in terms of the labour input. At the same time the case mix may be more complex and the acuity of illness more severe. The present data base does not provide this kind of information. However, it is doubtful that such profound changes could occur during the relatively short time of this study.

5.4.2 Specific Conclusions

In response to specific considerations on the extent to which unionization and collective bargaining increase Hospital Group labour costs, further analysis was carried out on labour costs. Specifically, the investigator looked at the relationships between costs and hours, by bargaining unit proxies and the distribution of labour costs among the bargaining units to determine the changes over the time of the study which were possibly attributable to unionization and collective bargaining. Finally, the investigator attempted to trace through the system the implementation collective agreement. The conclusions drawn from this part of the study are:

1. The relationship of paid hours to labour costs by bargaining unit category is significant in the majority of cases. The level of significance is most often at the p = .0000 level. This suggests that the manual process of assigning costs and paid hours to the proxy bargaining unit categories was relatively error free.

2. The distribution of labour costs among the bargaining units (and the residual components) varies considerably over the time of this study and among Hospital Groups. The increase in the Paramedical

Technical and Professional Technical Support units in the Hospital Groups representing large hospitals indicates that the skill mix of the hospital labour force is shifting to a more highly skilled mix. This lends support to the belief that hospital care is becoming more technical and specialized.

3. Labour costs attributable to the Professional Direct Nursing Care unit and the General Support Services unit consistently make up the largest share of hospital labour costs. Therefore, wage increases won by these groups will have the greatest potential to affect the rise in hospital costs.

4. Incremental labour costs as a result of the implementation of the various collective agreements cannot be traced through the hospital system using the data base provided by AHMC. There is no evidence to confirm that the overwhelming increase in hospital operating costs and labour costs from 1971-1977 are directly attributable to unionization and collective bargaining. "Price effects" leading to higher labour costs cannot be distinguished from other factors in this study. However, an examination of the distribution of labour costs and the changes in this distribution suggest that there

are "quality effects" affecting labour costs. In addition to this, the increases in paid hours previously cited indicate that there are "quantity effects." Only some of this increase in paid hours can be attributed to the shorter working day since paid hours continue to increase in 1976 and 1977. Unfortunately, the precise contribution of the "price," "quality" and "quantity" effects to rising labour costs cannot be determined.

5. Substitution effects are clearly evident between the Professional Direct Nursing Care and Auxiliary Nursing care units as the wage differential narrows between the two units.

5.5 Recommendations

Overall the large increases in hospital operating costs and labour costs are the result of many complex factors including the expectations of consumers and providers, the technology of the space age, and the changing nature of illness. This study has tried to explore one of the more simplistic reasons given for the rise in costs, namely, the unionization of the work force in the hospital industry. Even this reason is not readily examined. Provincial funding agencies throughout the country are faced with the dilemma of determining the costs of collective agreements in order that hospitals can be reimbursed the appropriate amounts. In the light of the many hurdles that were encountered in the course of this study, the following recommendations are made:

1. The present data base of Alberta Hospitals and Medical Care is inadequate to measure the incremental labour costs of collective agreements. Information on the wage and salary costs should be collected on the basis of bargaining unit categories in order to determine the costs of a collective agreement and hence the additional funds to be provided to the hospitals. Data on the numbers of staff at each point on the grid would be mandatory.

2. Accrual accounting should be fully implemented in hospitals. For instance, the prepayment of expenses which was encountered in the course of this study may have distorted the data.

3. The use of Hospital Groups in the study was too cumbersome and likely led to inaccurate assumptions in the tracing of costs. For instance, every hospital in a Hospital Group would not implement a collective agreement at the same time. This likely caused additional distortion of the data impeding efforts to trace costs through the particular Hospital Group. It would be useful to attempt to trace costs on an individual hospital basis. This would also serve to verify that the composition of the proxy bargaining unit categories used in this study coincided with the actual experience in the hospital industry.

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APPENDIX A

Monthly Wages and Salaries of Employee in Alberta Hospitals, 1971-1977

ALBERTA ASSOCIATION OF REGISTERED NURSES*

1971-1977

	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Registered Staff Nurse	Jan.71	$ 520	$ 545	$ 570	$ 595	$ 620	$ 645
	Jan.72	550	575	600	625	650	675
	Apr.73	605	635	664	695	725	760
	Nov.73	625	655	685	715	750	785
	Apr.74	665	695	725	760	795	830
	Nov.74	765	795	825	860	895	930
	Jan.75	900	935	970	1005	1040	1075
	Jan.76	972	1010	1048	1085	1123	1161
	Jan.77	1059	1101	1142	1183	1224	1265
Non-Registered Staff Nurse	Jan.71	$ 468	$ 490	$ 515	$ 540	$ 565	$ 590
	Jan.72	495	520	545	570	595	620
	Apr.73	545	570	595	620	650	680
	Nov.73	565	590	615	645	675	705
	Apr.74	600	630	660	690	720	755
	Nov.74	700	730	760	790	820	855
	Jan.75	810	845	880	915	950	985
	Jan.76	875	913	950	988	1026	1064
	Jan.77	954	995	1036	1077	1118	1160

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[*] In 1977 a separate entity, the United Nurses of Alberta, was established for the purpose of representing nurses in collective bargaining.

Appendix A (continued)

	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Assistant Head Nurse	Jan. 71	$ 545	$ 570	$ 595	$ 620	$ 645	$ 670
	Jan. 72	580	605	630	644	680	705
	Apr. 73	635	665	695	725	760	795
	Nov. 73	655	685	715	750	785	820
	Apr. 74	800	835	870	950	945	985
	Jan. 75	935	975	1015	1055	1095	1135
	Jan. 76	1010	1053	1096	1139	1183	1226
	Jan. 77						
Head Nurse and Instructor	Jan. 71	$ 600	$ 625	$ 650	$ 675	$ 700	$ 725
	Jan. 72	635	660	685	710	735	760
	Apr. 73	695	725	760	795	830	870
	Nov. 73	720	755	790	825	865	905
	Apr. 74	765	800	840	880	920	965
	Nov. 74	865	900	940	980	1020	1065
	Jan. 75	1000	1045	1090	1135	1180	1225
	Jan. 76	1080	1129	1177	1226	1274	1323
	Jan. 77	1177	1231	1283	1336	1389	1442

ALBERTA CERTIFIED NURSING AIDE ASSOCIATION*

1971-1977

	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Certified Nursing Aide	Jan.71	$ 360	$ 375	$ 390	$ 405	$ 425
	Oct.71	375	390	405	425	445
	Apr.72	390	405	425	445	465
	Oct.72	405	425	445	465	485
	Apr.73	430	450	470	490	510
	Dec.73	455	475	495	515	535
	Aug.74	480	500	520	540	560
	Nov.74	665	680	695	710	
	Jan.75	715	740	765	795	

	Effective Date	Year One	Year Two
Certified Nursing Aide, Registered Nursing Orderly, Orthopedic Technician	Apr.76	$ 859	$ 923
	Apr.77	906	974
Nursing Attendant	Apr.76	784	843
	Apr.77	827	889
Operating Room Technician	Apr.76	889	953
	Apr.77	938	1005

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* In 1977 this organization was renamed Alberta Association of Registered Nursing Assistants.

Appendix A (continued)

ALBERTA DIVISION EMPLOYEE PHARMACISTS' ASSOCIATION

1971-1977

	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Pharmacist	Jan.71	$ 675	$ 705	$ 740	$ 775	$ 810
	Oct.71	705	740	775	810	850
	July 72	735	770	805	845	885
	Apr.73	780	815	855	895	940
	Apr.74	825	865	905	950	1000
	Jan.75	1080	1125	1170	1215	1260
	Jan.76	1166	1215	1264	1312	1361
	Jan.77	1236	1288	1380	1391	1443

Appendix A (continued)

CANADIAN UNION OF PUBLIC EMPLOYEES
1971-1977

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Clerk Junior	1	Jan.71	$ 345	$ 354	$ 365	$ 376	$ 390
		Oct.71	360	369	380	391	405
		Apr.72	375	384	395	406	420
		Oct.72	39-	399	410	421	435
		Jan.73	433	442	453	464	478
		Aug.73	440	449	460	471	485
		Jan.74	475	484	495	506	520
		Oct.74	485	494	505	516	530
		Jan.75	501	511	523	533	548
		Apr.75	602	644			
		Apr.76	650	696			
		Apr.77	689	738			
Service Aide I	2.0	Jan.71	$ 345	$ 354	$ 365	$ 376	$ 390
		Oct.71	360	369	380	391	405
		Apr.72	375	384	395	406	420
		Oct.72	390	399	410	421	435
		Jan.73	433	442	453	464	478

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
		Aug.73	440	449	460	471	485
		Jan.74	475	484	495	506	520
		Oct.74	485	494	505	516	530
		Jan.75	501	511	523	533	548
Dietary Aide Housekeeping Aide	2.0	Jan.71	$ 328	$ 338	$ 350	$ 360	$ 374
		Oct.71	343	353	365	375	389
		Apr.72	358	368	380	390	404
		Oct.72	373	383	395	405	519
		Jan.73	426	438	448	462	
		Aug.73	433	445	455	469	
		Jan.74	468	480	490	504	
		Oct.74	478	490	500	514	
		Jan.74	494	506	517	531	
Dietary Aide Housekeeping Aide, Laundry Worker I, Service Aide I	2.0	Apr.75	$ 648	$ 700			
		Apr.76	701	755			
		Apr.77	748	801			

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Clerk I	3.0	Jan.71	$ 345	$ 354	$ 365	$ 376	$ 390
		Oct.71	360	369	380	391	405
		Apr.72	375	384	395	406	420
		Oct.72	390	399	410	421	435
		Jan.73	433	442	453	464	478
		Aug.73	440	449	460	471	485
		Jan.74	475	484	495	506	520
		Oct.74	485	494	505	516	530
		Jan.75	501	511	523	533	548
Cashier-Dietary Clerk I, Receptionist, Typist I	3.0	Apr.75	$ 685	$ 737			
		Apr.76	741	737			
		Apr.77	786	843			
Service Aide II	3.5	Jan.71	$ 356	$ 367	$ 379	$ 392	$ 405
		Oct.71	371	382	394	407	420
		Apr.72	386	397	409	422	435
		Oct.72	401	412	424	437	450
		Jan.73	444	455	467	480	493
		Aug.73	451	462	474	487	500
		Jan.74	486	497	509	522	535
		Oct.74	496	507	519	532	545
		Jan.75	512	524	536	550	563

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Dark Room Assistant, Pharmacy Assistant, Service Aide II, Sewing Operator I Therapy Aide	3.5	Apr.75	$ 703	$ 757			
		Apr.76	758	817			
		Apr.77	804	866			
Darkroom Technician	4.0	Jan.71	$ 448	$ 460	$ 474	$ 487	$ 502
		Oct.71	468	480	494	507	522
		Apr.72	488	500	514	527	542
		Oct.72	508	520	534	547	562
		Jan.73	551	563	577	590	605
		Aug.73	558	570	584	597	612
		Jan.74	593	605	619	632	647
		Oct.74	603	615	629	642	657
		Jan.75	624	635	651	664	679
Maintenance Worker I	4.0	Jan.71	$ 426	$ 438	$ 450	$ 463	$ 476
		Oct.71	446	458	470	483	496
		Apr.72	466	478	490	503	516
		Oct.72	486	498	510	523	536
		Jan.73	574	587	600	615	629
		Aug.73	581	594	607	622	636
		Jan.74	616	629	642	657	671
		Oct.74	626	639	652	667	681
		Jan.75	652	661	674	689	703

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Clerk II House-mother Typist II	4.0	Jan.71	$ 356	$ 367	$ 379	$ 392	$ 405
		Oct.71	371	383	394	407	420
		Apr.72	386	397	409	422	435
		Oct.72	401	412	424	437	450
		Jan.73	444	455	467	480	493
		Aug.73	451	462	474	487	500
		Jan.74	486	497	509	522	535
		Oct.74	496	507	519	532	545
		Jan.75	512	524	536	550	563
Cook's Assistant	4.0	Jan.71	$ 407	$ 420	$ 435	$ 447	$ 462
		Oct.71	427	440	455	467	482
		Apr.72	447	460	475	487	502
		Oct.72	467	480	495	507	522
		Jan.73	510	523	538	550	565
		Aug.73	517	530	545	557	572
		Jan.74	552	565	580	592	607
		Oct.74	562	575	590	602	617
		Jan.75	582	593	610	622	637
Dietary Attendant	4.0	Jan.71	$ 345	$ 354	$ 365	$ 376	
		Oct.71	360	369	380	391	
		Apr.72	375	384	395	406	
		Oct.72	390	399	410	421	
		Jan.73	433	442	453	464	

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
		Aug.73	$ 440	$ 449	$ 460	$ 471	
		Jan.74	475	484	495	506	
		Oct.74	485	494	505	516	
		Jan.75	501	511	523	533	
Switch-board Operator	4.0	Jan.71	$ 373	$ 384	$ 396	$ 409	
		Oct.71	387	399	411	424	
		Apr.72	402	414	426	439	
		Oct.72	422	434	446	459	
		Jan.73	465	477	489	502	
		Aug.73	472	484	496	509	
		Jan.74	507	519	531	544	
		Oct.74	517	529	541	554	
		Jan.75	534	546	560	573	

	Current Pay Grade	Effective Date	Year One	Year Two
Clerk II				
Cook's Assistant				
C.S.F. Attendant				
Dark Room Technician				
Dietary Attendant				
Housekeeping Attendant				
Housemother				
Laboratory Assistant				
Laundry Worker II				
Maintenance Worker I				
Nursing Attendant				
Play Organizer				
Porter				
Printing Assistant				
Sewing Operator II				
Stenographer				
Switchboard Operator				
Typist II				
Unit Clerk	4.0	Apr.75	$ 726	$ 781
		Apr.76	783	844
		Apr.77	831	895

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Working Supervisor	5.0	Jan.71	$ 388	$ 404	$ 417	$ 433	$ 448
		Oct.71	403	419	432	448	463
		Apr.72	423	439	452	468	483
		Oct.72	443	459	472	488	503
		Jan.73	486	502	515	531	546
		Apr.73	493	509	522	538	553
		Jan.74	528	544	557	573	588
		Oct.74	538	554	567	583	598
		Jan.75	556	573	587	602	619

	Current Pay Grade	Effective Date	Year One	Year Two
Admitting Officer Clerk III Driver Porter Keypunch Operator Laundry Library Assistant Secretary I Stores Attendent Typist III Working Supervisor	5.0	Apr.75	$ 770	$ 829
		Apr.76	832	895
		Apr.77	883	949

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Secretary I Keypunch Operator	5.0	Jan.71	$ 388	$ 404	$ 417	$ 433	$ 448
		Oct.71	403	419	432	448	463
		Apr.72	423	439	452	468	483
		Oct.72	443	459	472	488	503
		Jan.73	486	502	515	531	546
		Aug.73	493	509	522	538	553
		Jan.74	528	544	557	573	588
		Oct.74	538	554	567	583	598
		Jan.75	556	573	587	602	619
Clerk III Typist III Medical Library Assistant Admitting Officer	5.0	Jan.71	$ 372	$ 384	$ 396	$ 409	$ 424
		Oct.71	387	399	411	424	439
		Apr.72	402	414	426	439	454
		Oct.72	422	434	446	459	474
		Jan.73	465	477	489	502	517
		Aug.73	472	484	496	509	524
		Jan.74	507	519	531	544	559
		Oct.74	517	529	541	554	569
		Jan.75	534	546	560	573	588

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Nursing Orderly	5.5	Jan.71	$ 466	$ 479	$ 492	$ 507	$ 521
		Oct.71	486	499	512	527	541
		Apr.72	502	519	532	547	561
		Oct.72	531	544	557	572	586
		Jan.73	574	587	600	615	629
		Aug.73	581	594	607	622	636
		Jan.74	616	629	642	657	671
		Oct.74	626	639	652	667	681
		Jan.75	652	661	674	689	703

	Current Pay Grade	Effective Date	Year One	Year Two
Bench Technician -Prosthetics Dental Assistant Greenhouse Gardener Nursing Orderly Recreational Therapist	5.5	Apr.75	$ 795	$ 855
		Apr.76	859	923
		Apr.77	912	979

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Clerk IV Secretary II	6.0	Jan. 71	$ 407	$ 420	$ 435	$ 447	$ 462
		Oct. 71	427	440	455	467	482
		Apr. 72	447	460	475	487	502
		Oct. 72	467	480	495	507	522
		Jan. 73	510	523	538	550	565
		Aug. 73	517	530	545	557	572
		Jan. 74	552	565	580	592	607
		Oct. 74	562	575	590	602	617
		Jan. 75	582	593	610	622	637

	Current Pay Grade	Effective Date	Year One	Year Two
Clerk IV Medical Records Supervisor Secretary II Senior Switchboard Operator Typist IV Unit Manager	6.0	Apr. 75	$ 819	$ 881
		Apr. 76	885	952
		Apr. 77	939	1110

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Therapy Assistant	6.5	Jan.71	$ 407	$ 420	$ 435	$ 447	$ 462
		Oct.71	427	440	445	467	482
		April 72	447	460	475	487	502
		Oct.72	467	480	495	507	522
		Jan.73	510	523	538	550	565
		Aug.73	517	530	545	557	572
		Jan.74	552	565	580	582	607
		Oct.74	562	575	590	602	617
		Jan.75	582	593	610	622	637
O.R. Equipment Technician		Jan.71	$ 518	$ 533	$ 551	$ 567	$ 585
		Oct.71	543	558	576	592	610
		Apr.72	568	583	601	617	635
		Oct.72	593	608	626	642	660
		Jan.73	636	651	669	695	703
		Aug.73	643	658	676	692	710
		Jan.74	678	693	711	727	745
		Oct.74	688	703	721	737	755
		Jan.75	711	726	745	762	780

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two
Ambulance Driver/Orderly				
Cook I				
Graphic Artist				
Maintenance Worker I				
O.R. Equipment Technician				
O.R. Technician				
Orthopedic Technician				
Pathology Assistant				
Senior Stores Attendant				
Senior Supervisor				
Therapy Assistant	6.5	April 75	$ 844	$ 908
		April 76	912	981
		April 77	966	1040

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Central Control Helper	7.5	Jan.71	$ 466	$ 479	$ 492	$ 502	$ 521
		Oct.71	486	499	512	527	541
		April 72	506	519	532	547	561
		Oct.72	531	544	557	572	586
		Jan.73	574	587	600	615	629
		Aug.73	581	594	607	622	636
		Jan.74	616	629	642	657	671
		Oct.74	626	639	652	667	681
		Jan.75	652	661	674	689	703

	Current Pay Grade	Effective Date	Year One	Year Two
Butcher's Helper				
Central Control Helper				
Cook II				
Orthopedic Shoemaker	7.5	April 75	$ 899	$ 967
		April 76	972	1045
		April 77	1032	1107

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Central Control Operator	8.5	Jan. 71	$ 518	$ 533	$ 551	$ 567	$ 585
		Oct. 71	543	558	576	592	610
		Apr. 72	568	583	601	617	635
		Oct. 72	593	608	626	642	660
		Jan. 73	636	651	669	685	703
		Aug. 73	643	658	676	692	710
		Jan. 74	678	693	711	727	745
		Oct. 74	688	703	721	737	755
		Jan. 75	711	726	745	762	780

	Current Pay Grade	Effective Date	Year One	Year Two
Baker	8.5	April 75	$ 954	$1017
Central Control Operator		April 76	1029	1110
Cook III		April 77	1092	1178

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Payroll Supervisor	9.0						
Purchasing Assistant							
Stores Supervisor		Apr. 75	$ 982	$1057			
		Apr. 76	1061	1141			
		Apr. 77	1126	1210			
Butcher							
Cook IV							
Maintenance Worker III							
Stationery Engineer 4th Class	9.5	Apr. 77	$1156	$1246			
General Services Supervisor	10.0	Apr. 76	$1127	$1211			
		Apr. 77	1195	1284			

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Electronics Technician I	10.5	Jan.71	$ 553	$ 569	$ 587	$ 604	$ 623
		Oct.71	578	594	612	629	648
		Apr.72	603	619	637	654	673
		Oct.72	633	649	667	684	703
		Jan.73	676	692	710	727	746
		Aug.73	683	699	717	734	753
		Jan.74	718	734	752	769	788
		Oct.74	728	744	762	779	798
		Jan.75	752	769	787	806	824
Electronics Technician I							
Machinist							
Maintenance Worker IV							
Printing Technician							
Stationery Engineer 3rd Class							
Welder Mechanic	10.5	Apr.75	$1073	$1154			
		Apr.76	1159	1247			
		Apr.77	1229	1321			

Appendix A (continued)

	Current Pay Grade	Effective Date	Year	Year	Year	Year	Year
Head Gardener	11.5	Jan.71	$ 585	$ 602	$ 620	$ 639	$ 659
		Oct.71	610	627	645	664	684
		Apr.72	640	657	675	694	714
		Oct.72	670	687	705	724	744
		Jan.73	713	730	748	767	787
		Aug.73	720	737	755	774	794
		Jan.74	755	772	790	809	829
		Oct.74	765	782	800	819	838
		Jan.75	791	807	826	846	866
Electronics Technician II							
		Jan.71	$ 660	$ 679	$ 700	$ 721	$ 743
		Oct.71	690	709	730	751	773
		Apr.72	720	739	760	781	803
		Oct.72	755	774	795	816	838
		Jan.73	798	817	838	859	881
		Aug.73	805	824	845	866	888
		Jan.74	840	859	880	901	923
		Oct.74	850	869	890	911	933
		Jan.74	878	898	920	941	964
Chef							
Electronics Technician II							
Head							
Gardener		Apr.76	$1232	$1326			
		Apr.77	1306	1406			

Appendix A (continued)

	Current Pay Grade	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Accountant	12.0	Apr. 75	$1178	$1267			
		Apr. 76	1272	1368			
		Apr. 77	1349	1451			
Stationery Engineer 2nd Class	12.5	Apr. 75	$1215	$1307			
		Apr. 76	1312	1412			
		Apr. 77	1456	1561			

Journey Tradesmen :

- Electrician
- Electronic Technician III
- Carpenter
- Painter
- Plumber/Steamfitter

95 percent of local construction trade rate.

ASSOCIATION OF CHARTERED PHYSIOTHERAPISTS OF ALBERTA
AND
ALBERTA SOCIETY OF OCCUPATIONAL THERAPISTS
1971 - 1977

	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Physiotherapist I	Jan.71	$ 540	$ 565	$ 590	$ 615	$ 645
Occupational Therapist I	Oct.71	555	580	605	635	665
	July 72	575	600	630	660	690
	Apr.73	635	665	695	725	760
	Nov.73	655	685	715	750	785
	Apr.74	695	725	760	795	830
	Jan.76	1021	1064	1107	1150	1193
	Jan.77	1082	1128	1173	1219	1265
Physiotherapist II	Jan.71	$ 585	$ 610	$ 640	$ 670	$ 700
Occupational Therapist II	Oct.71	600	630	660	690	720
	July 71	620	650	680	710	745
	Apr.73	680	710	745	780	815
	Nov.73	700	735	770	805	845
	Apr.74	740	775	810	850	890
	Jan.75	1005	1050	1095	1140	1185
	Jan.76	1085	1134	1183	1231	1280
	Jan.77	1150	1202	1254	1305	1357

Appendix A (continued)

ALBERTA REGISTERED DIETITIANS' ASSOCIATION

1971 - 1977

	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Dietitian I	Jan.71	$ 654	$ 680	$ 707	$ 735	$ 755
	Aug.71	680	707	735	764	774
	Apr.72	707	735	764	795	805
	Apr.73	825	858	891	928	948
	Jan.75	1045	1090	1135	1180	1225
	Jan.76	1129	1177	1226	1274	1323
	Jan.77	1197	1248	1300	1350	1402
Dietitian II	Apr.73	$ 802	$ 834	$ 866	$ 902	$ 922
	Apr.74	866	901	936	974	994
	Jan.75	1085	1130	1175	1220	1265
	Jan.76	1172	1220	1269	1318	1366
	Jan.77	1242	1293	1345	1397	1448

Appendix A (continued)

HEALTH SCIENCES ASSOCIATION OF ALBERTA

	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Laboratory Technologist I Radiological Technologist I Respiratory Technologist I EEG Technologist	Apr.73	$ 575	$ 600	$ 630	$ 660	$ 690
	Jan.74	600	630	660	690	720
	Oct.74	630	660	690	720	755
	Jan.75	860	895	930	965	1000
	Jan.76	929	967	1004	1042	1082
	Jan.77	985	1025	1064	1105	1145
Laboratory Technologist II Radiological Technologist II Respiratory Technologist II	Apr.73	$ 635	$ 665	$ 695	$ 725	$ 760
	Jan.74	660	690	720	755	790
	Oct.74	690	720	755	790	825
	Jan.75	920	960	1000	1040	1080
	Jan.76	994	1037	1080	1123	1166
	Jan.77	1054	1099	1145	1190	1236

Appendix A (continued)

	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
Laboratory Technologist III Radiological Technologist III Respiratory Technologist III	Apr.73	$ 720	$ 755	$ 790	$ 825	$ 865
	Jan.74	745	780	815	855	895
	Oct.74	775	810	850	890	930
	Jan.75	1005	1050	1095	1140	1185
	Jan.76	1085	1134	1183	1231	1280
	Jan.77	1150	1202	1254	1305	1357
Certified Combined Technician*	Apr.73	$ 485	$ 505	$ 530	$ 555	$ 580
	Jan.74	510	535	560	585	610
	Oct.74	540	565	590	615	645
Dietary Technician*	Apr.73	$ 505	$ 530	$ 555	$ 580	$ 605
	Jan.74	530	555	580	605	635
	Oct.74	560	585	610	640	670
Accredited Record Technician Certified Combined Technician Dietary Technician*	Jan.75	$ 790	$ 825	$ 860	$ 895	$ 930
	Jan.76	853	891	929	967	1004
	Jan.77	904	944	985	1025	1064

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*Up to January 1, 1976, Accredited Record Technician, Certified Combined Technician, and Dietary Technician Classifications were compensated at different monthly salaries.

Appendix A (continued)

	Effective Date	Year One	Year Two	Year Three	Year Four	Year Five
ECG Technician	Apr.73	$ 460	$ 480	$ 500	$ 525	$ 550
	Jan.74	485	505	530	555	580
	Oct.74	515	540	565	590	615
	Jan.75	745	780	815	850	885
	Jan.76	806	842	880	918	956
	Jan.77	853	893	933	973	1013
Medical Photographer	Apr.73	$ 691	$ 711	$ 731	$ 751	$ 771
	Jan.74	711	731	751	771	791
	Oct.74	736	756	776	796	816
	Jan.75	965	1010	1055	1100	1145
	Jan.76	1042	1091	1139	1188	1237
	Jan.77	1105	1156	1207	1259	1311

APPENDIX B

RELATIVE AND ABSOLUTE INCREASES OF SELECTED OCCUPATIONS IN THE BARGAINING UNITS

1971 - 1977

Bargaining Group Collective Agreements With A December 31st Expiry Date	Salary Rate January 1971		Salary Rate January 1977		% Increase 1971-1977		Dollar Increase 1971-1977	
	Star Rate	Top Rate	Start Rate	Top Rate	Start Rate	Top Rate	Start Rate	Top Rate
Professional Direct Nursing Care								
(A.A.R.N. - U.N.A.)								
Registered Staff Nurse	$ 520	$ 695	$1059	$1265	204	196	$ 539.	$ 620
Head Nurse and Instructor	600	725	1177	1442	196	199	577	717
Paramedical Technical								
(H.G.A.A.)								
Laboratory Technologist	575	690	985	1145	171	166	410	455
Medical Records Librarian	550	660	985	1145	179	173	435	485
Dietary Technician	505	605	904	1064	179	176	399	459
Professional Paramedical Support								
Dietician I	654	755	1197	1402	183	186	543	647
Physiotherapist I	540	645	1082	1265	200	196	542	620
Pharmacist	675	810	1236	1443	183	178	561	633
Bargaining Group Collective Agreements With A March 31 Expiry Date	April 1971		April 1977					
General Support Services								
(C.U.P.E.)								
Housekeeping/Dietary Aide I	328	374	743	801	227	214	415	427
Maintenance Work I	426	476	831	895	195	188	405	419
Nursing Orderly	466	521	912	979	196	188	446	458
Auxiliary Nursing Care								
(A.A.C.N.A.-A.A.R.N.A.)								
Certified Nursing Aide	360	425	906	974	252	229	546	549

APPENDIX C

SUMMARY TABLES OF HOSPITAL OPERATING COSTS, LABOUR COSTS, PATIENT DAYS, PAID HOURS AND AVERAGE PERCENTAGE OCCUPANCY RATE FOR EACH GROUP HOSPITAL GROUP FROM 1971-1977

SUMMARY TABLE HOSPITAL GROUP 1

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	771.5	863.9	977.8	1143.4	1613.9	1891.3	1673.9
Labour Costs (000)	573.3	615.4	686.5	821.0	1196.3	1405.0	1245.0
% Distribution							
Professional Direct Nursing Care	41.3	39.7	38.6	39.7	37.4	36.8	39.4
Auxiliary Nursing Care	6.8	6.2	6.4	5.6	4.4	7.8	8.8
General Support Services	39.4	41.0	39.9	40.8	42.6	40.6	37.9
Paramedical Technical	5.6	6.2	8.0	6.9	8.2	7.4	6.9
Professional Paramedical Support	.5	.5	.6	.7	.7	.8	.6
Residual	6.4	6.4	6.5	6.3	6.7	6.6	6.4
Patient Days	20608	21586	20083	20218	20458	21561	16346
Paid Hours	231881	236739	241695	245693	251786	250823	206645
Average % Occupancy Rate	-	84.3	82.6	74.8	78.7	77.0	77.5

SUMMARY TABLE HOSPITAL GROUP 2

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	2526.0	2710.8	2946.0	3517.7	4683.0	5587.2	7011.2
Labour Costs (000)	1823.0	1967.0	2129.3	2535.7	3538.5	4155.0	5183.0
% Distribution							
Professional Direct Nursing Care	35.0	33.5	34.0	32.6	31.8	30.5	31.6
Auxiliary Nursing Care	12.9	13.7	14.7	14.8	16.1	18.9	16.0
General Support Services	35.7	35.8	35.2	36.0	34.7	34.0	34.9
Paramedical Technical	8.0	8.2	7.7	8.1	9.1	9.3	9.1
Professional Paramedical Support	0.4	0.4	0.5	0.4	0.4	0.4	0.5
Residual	8.0	8.4	7.9	8.1	7.9	6.9	7.9
Patient days	66138	55408	60913	60417	55913	61718	77760
Paid Hours	701062	712257	705393	714259	721514	733684	842897
Average % Occupancy Rate	n.a.	60.8	58.0	55.0	49.8	51.5	64.2

SUMMARY TABLE HOSPITAL GROUP 3

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	5933.8	6359.3	7215.8	8975.5	10781.8	11163.3	13416.4
Labour Costs (000)	4139.9	4457.0	5073.9	6169.9	7884.4	8650.0	9596.0
% Distribution							
Professional Direct Nursing Care	33.6	32.7	31.5	31.0	30.9	29.7	31.2
Auxiliary Nursing Care	14.7	16.0	15.8	14.7	15.5	17.0	15.7
General Support Services	35.2	34.6	34.9	36.0	35.6	35.3	34.8
Paramedical Technical	7.7	8.0	8.4	8.7	9.1	9.1	9.2
Professional Paramedical Support	0.8	0.5	0.5	0.7	0.7	0.7	0.7
Residual	8.0	8.2	8.9	8.9	8.2	8.2	8.4
Patient Days	152638	150623	147537	156780	133288	126498	126306
Paid Hours	1606774	1616318	1672160	1741751	1587196	1485031	1534638
Average % Occupancy Rate	n.a.	68.2	64.6	65.9	62.2	58.8	56.7

SUMMARY TABLE HOSPITAL GROUP 4

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	4054.4	4028.3	4604.5	5448.6	8352.2	9390.0	10117.2
Labour Costs (000)	2738.6	2757.0	3151.1	3747.9	5977.3	6747.0	7162.0
% Distribution							
Professional Direct Nursing Care	35.2	34.8	34.2	32.8	32.7	30.7	31.9
Auxiliary Nursing Care	15.3	16.4	14.8	14.4	14.8	17.6	15.9
General Support Services	31.3	31.0	32.3	33.7	32.9	32.7	33.1
Paramedical Technical	8.6	8.8	9.5	9.6	9.7	9.4	9.8
Professional Paramedical Support	1.3	0.8	0.8	1.1	1.2	1.1	1.1
Residual	8.3	8.2	8.4	8.4	8.7	8.5	8.2
Patient Days	107167	96278	98598	96811	101460	97236	100048
Paid Hours	1011196	942615	989341	1024721	1171890	1125192	1126042
Average % Occupancy Rate	n.a.	70.0	63.2	61.8	62.6	60.0	63.5

SUMMARY TABLE HOSPITAL GROUP 5

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	4600.8	5424.4	6548.8	7733.5	11299.7	12611.6	15973.1
Labour Costs (000)	3224.9	3771.0	4531.6	5353.1	8123.4	8939.0	11189.0
% Distribution							
Professional Direct Nursing Care	32.4	32.5	32.0	31.2	30.9	30.1	32.5
Auxiliary Nursing Care	16.8	16.7	16.6	15.7	16.5	18.8	16.1
General Support Services	31.3	32.0	32.1	33.1	32.3	31.5	30.7
Paramedical Technical	8.2	8.9	9.4	9.7	10.5	10.2	10.3
Professional Paramedical Support	1.8	1.5	1.5	1.7	1.8	1.3	1.6
Residual	9.5	8.4	8.4	8.6	8.0	8.1	8.8
Patient Days	124316	137957	147789	144904	147835	144522	170941
Paid Hours	1232008	1334729	1476373	1500960	1596043	1505907	1755939
Average % Occupancy Rate	n.a.	72.8	66.0	66.3	64.7	63.0	62.7

SUMMARY TABLE HOSPITAL GROUP 6

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	7988.0	8536.1	8594.0	10201.8	14161.7	16523.4	13360.8
Labour Costs (000)	5704.0	6080.0	6206.3	7281.8	10443.7	12047.0	9777.0
% Distribution							
Professional Direct Nursing Care	33.0	31.9	31.6	31.9	30.9	31.1	31.3
Auxiliary Nursing Care	17.0	16.8	17.3	16.9	18.1	18.7	17.7
General Support Services	33.8	34.4	34.0	33.6	32.2	31.4	32.5
Paramedical Technical	7.6	8.1	8.4	8.7	9.8	9.5	9.7
Professional Paramedical Support	1.2	1.4	1.3	1.1	1.5	1.3	1.5
Residual	7.4	7.4	7.4	7.8	7.5	8.0	7.0
Patient Days	213179	209208	188641	200801	196125	197275	153182
Paid Hours	2132316	2138654	1978794	2008692	2055229	2012690	1576606
Average % Occupancy Rate	n.a.	69.7	65.7	67.8	65.1	77.0	67.6

SUMMARY TABLE HOSPITAL GROUP 7

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	9681.0	10637.9	11633.9	12686.8	19288.3	21292.4	24648.9
Labour Costs (000)	6832.0	7246.0	7951.9	8732.8	13652.6	15138.0	17101.0
% Distribution							
Professional Direct Nursing Care	33.2	32.9	32.6	32.2	31.4	31.7	34.8
Auxiliary Nursing Care	18.1	18.7	17.3	16.0	17.6	18.8	16.1
General Support Services	28.9	29.6	31.0	32.1	30.9	29.0	27.7
Paramedical Technical	8.6	8.9	9.2	10.1	10.4	10.1	10.1
Professional Paramedical Support	1.9	1.9	2.0	1.8	2.0	2.1	1.9
Residual	9.3	8.0	7.9	7.8	7.7	8.3	9.4
Patient Days	237400	241211	235190	215574	226602	216657	221845
Paid Hours	2539620	2505997	2504818	2396440	2639774	2482774	2626586
Average % Occupancy Rate	n.a.	74.4	69.0	67.2	67.3	65.6	64.6

SUMMARY TABLE HOSPITAL GROUP 8

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	27247.0	30066.8	33726.4	36840.9	52485.8	59106.1	64772.5
Labour Costs (000)	19389.0	21209.0	23811.1	25682.8	37737.5	42604.0	46621.0
% Distribution							
Professional Direct Nursing Care	33.3	33.2	32.5	31.2	30.0	29.0	30.5
Auxiliary Nursing Care	14.1	14.0	13.1	11.5	11.7	12.1	10.1
General Support Services	24.2	24.3	23.6	23.0	22.5	22.3	23.2
Paramedical Technical	13.5	13.1	14.6	16.2	13.3	13.3	13.2
Professional Paramedical Support	2.3	3.0	3.8	4.9	4.9	5.0	5.2
Residual	12.6	12.4	12.4	13.2	17.6	18.3	17.8
Patient Days	508763	509927	512196	465264	432236	448422	434209
Paid Hours	6638882	6813811	6895776	6410945	5637738	6746448	6972146
Average % Occupancy Rate	n.a.	76.9	76.3	78.8	74.2	73.1	73.9

SUMMARY TABLE HOSPITAL GROUP 9

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	98714.0	110200.0	124929.7	155145.7	109755.5	238750.5	257595.9
Labour Costs (000)	73257.0	81399.0	92772.0	113483.0	157602.7	176568.0	189856.0
% Distribution							
Professional Direct Nursing Care	29.9	29.8	29.1	28.5	29.3	29.2	30.3
Auxiliary Nursing Care	12.2	12.2	11.7	11.2	10.8	10.2	9.3
General Support Services	25.8	25.9	26.2	25.9	25.5	23.7	24.2
Paramedical Technical	10.0	10.0	11.5	12.3	12.6	13.7	12.9
Professional Paramedical Support	4.8	5.2	5.3	5.4	5.2	5.2	5.2
Residual	18.0	16.9	16.2	16.7	16.6	17.8	18.1
Patient Days	1675182	1681925	1674658	1738190	1680690	1668735	1634151
Paid Hours	24632492	25253343	25702390	27399673	28420680	28122041	27613647
Average % Occupancy Rate	n.a.	80.4	77.3	78.0	75.2	76.5	75.8

SUMMARY TABLE HOSPITAL GROUP Y

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	10201.5	11123.0	13580.4	17579.0	24752.0	28820.7	30809.3
Labour Costs (000)	7408.9	8152.0	9804.9	12268.0	17954.0	21356.0	23034.0
% Distribution							
Professional Direct Nursing Care	20.3	19.9	18.9	19.5	19.8	19.0	19.7
Auxiliary Nursing Care	14.9	14.3	12.9	11.5	11.2	13.4	12.7
General Support Services	52.8	53.2	53.0	51.0	50.8	51.0	50.1
Paramedical Technical	0.6	0.6	0.8	0.6	0.5	0.4	0.4
Professional Paramedical Support	4.9	5.3	6.4	7.2	7.6	7.2	7.3
Residual	6.5	9.0	8.0	10.2	10.1	9.0	9.8
Patient Days	583291	587471	604310	643766	535116	666166	661946
Paid Hours	2963340	3042369	3307805	3592688	3674272	3771462	3837155
Average % Occupancy Rate	n.a	97.1	95.6	94.7	95.0	95.7	95.6

SUMMARY TABLE HOSPITAL GROUP O

YEAR	1971	1972	1973	1974	1975	1976	1977
Operating Costs (000)	4953.4	5448.0	5987.0	7034.7	9583.3	10740.0	11872.9
Labour Costs (000)	3343.3	3697.0	4063.9	4831.0	6721.0	7516.0	8219.0
% Distribution							
Professional Direct Nursing Care	22.1	21.7	20.9	20.8	21.0	20.4	22.0
Auxiliary Nursing Care	14.9	15.3	14.4	12.8	12.0	12.6	11.4
General Support Services	50.5	50.6	51.7	52.7	54.4	54.4	54.3
Paramedical Technical	0.5	0.3	0.7	1.1	0.6	0.8	0.9
Professional Paramedical Support	5.4	6.5	6.4	6.9	6.6	6.6	5.8
Residual	6.6	5.6	5.9	5.7	5.4	5.2	5.6
Patient Days	270807	279847	274162	275722	278733	281858	289592
Paid Hours	1346685	1421806	1421160	1458058	1445077	1378137	1406741
Average % Occupancy Rate	n.a.	97.1	96.6	97.4	97.9	98.6	98.6